Coastal Zone Management Plan 1975

Prepared by
City Planning Commission
New Orleans, Louisiana

VOLUME 2

Coastal Zone Management Plan 1975 Volume 2 New Orleans, Louisiana

Coastal Zone Management Plan

Volume 2

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The Planning Commission also wishes to thank all those agencies, organizations and individuals providing comments and advice in connection with this report.

PREFACE

This report was prepared to present to the City of New Orleans for its consideration, with the initial means by which to control land uses and environmental quality within viable marsh estuary areas. Through implementation, this plan should allow the City of New Orleans to attain the following goals:

1) The maintenance of a high level of quality within estuary areas in particular and within the City of New Orleans in general;

2) the formulation of land use policies and techniques appropriate to marsh-estuary areas;

3) the formulation of a means by which energy resources may be exploited without adversely impacting environmental quality;

4) the provision of adequate open space and recreational areas for the benefit of the citizens of the New Orleans Metropolitan area, and the State of Louisiana;

5) to protect for perpetuity, the economic and ecologic resources represented by the natural environment;

6) the efficient utilization of existing governmental agencies, in a coordinated fashion, in the management of sensitive environmental areas; and,

7) the establishment of land use guidelines and priorities in estuary areas.

In order to receive as much input as possible from governmental agencies, civic groups, and the general public, this plan is being circulated to the agencies and organizations listed below and is available to the general public upon request; and prior to official adoption of this plan, at least one public hearing will be held.

Agencies and Organizations from whom comments have been solicited are:

U.S. Environmental Protection Agency
Office of Coastal Environments, National Oceanic and Atmospheric Administration
Bureau of Outdoor Recreation, U.S. Department of Interior
Bureau of Sport Fisheries and Wildlife, U.S. Department of Interior
Louisiana Air Control Commission
Environmental Protection Unit, Louisiana Attorney General's Office
Louisiana Conservation Department
Louisiana Stream Control Commission
Louisiana Wildlife and Fisheries Commission
Louisiana Section, Gulf Southwest Chapter, American Institute of Planners
American Society of Planning Officials
Audubon Society of New Orleans
Sierra Club, Delta Chapter
Ecology Center of Louisiana, Inc.
Environmental Committee, Goals for Louisiana
Department of Environmental Affairs, Louisiana State University in New Orleans
New Orleans Center for Housing and Environmental Law
Tulane University Environmental Action Committee
Coastal Resources Unit, Center for Wetland Resources, Louisiana State University
Engineering Sciences Environmental Center, Tulane University School of Engineering
Department of Environmental Health Sciences, Tulane University of Public Health and Tropical Medicine
Chamber of Commerce of the Greater New Orleans Area
Regional Planning Commission of Jefferson, Orleans, St. Bernard and St. Tammany Parishes
State of Louisiana, Office of State Planning
New Orleans Junior Chamber of Commerce
Young Men's Business Club of New Orleans
Louisiana State Parks and Recreation Commission
Forest Service, U.S. Department of Agriculture
U.S. Army, Corps of Engineers

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Introduction

Of importance in developing and implementing a coastal zone management plan is the recognition of those factors, both physical and cultural, which determine development constraints, opportunities and needs of the City of New Orleans.

The geologic history of the New Orleans area has been a vital factor in shaping the city's geography. Constant sea fluctuations, glaciations, depositions and faulting have influenced the location of the important Pleistocene sedimentation which is known to be the best foundation characteristics in the region. These foundations are close to the surface on the north shore of Lake Pontchartrain, when they remained uplifted and became weather exposed about 50,000 years B. P. However, the south shore surface was subject to fluctuating sea levels and further change.

During one lowering of sea level a shallow marine deposit which had accumulated during the high water, formed a surface crust which extends from the north shore of Lake Pontchartrain through the City of New Orleans at depths of 20' to 120' below the surface.

A rise in sea level about 7,000 to 4,000 years ago caused islands to be formed by Pleistocene sands deposited in the open gulf by the Pearl River. These islands are part of the formative base of what is now the present south shore of Lake Pontchartrain.

About 4000 years B. P. - 700 years the major deltaic lobe of the Mississippi River developed (St. Bernard Delta Complex) creating a sequence of prodelta, lacustrine and delta front deposits. Natural levee ridges emerged and mud flats became established and colonized by marsh grasses. During this period Lake Pontchartrain was formed and there was indian activity in the area.

During the period of geologic history the St. Bernard Complex was abandoned when the Mississippi River diverted to the west and peat and organic debris continued to be deposited in the swamps and marshes. Salinities increased and the estuaries were formed.

The New Orleans area is still tectonically active. The northern gulf coast geosyncline passes directly under the area and zones of active faulting are present. In a near sea level area such as New Orleans minor fault movement can be highly significant.

Of potential value is the massive geothermal field which is buried between 45,000 and 75,000 feet below the surface.

European colonization of the New Orleans area took place during the early 1700's and in 1722 Jean Baptiste le Moyne, Sieur de Bienville was charged with making the city the capitol of a new french colony. Early life in the area was not simple; there were constant periods of flooding, swarms of mosquitoes and heavy storms. From the outset the population make up of New Orleans was varied being formed of a myriad of races, religious and nationalities. During the period from 1720 until its purchase by the United States New Orleans was exchanged back and forth between France and Spain, a remote pawn in the European power struggle. By the time of the 1803 purchase of the territory of Louisiana, which included New Orleans, the French and Spanish settlers had blended into a population unit which was predominant in the city government and surrounding plantation life.

The 1803 purchase increased what had been a trickle of "Americans" into the Orleans area, an event which the Spanish-French viewed with chagrin. They shunned the new comers, retreated further into their own "native" society and even imposed geographic boundries upon those from outside the area.

In spite of the division among all segments of society, particularly the political level, the City's economy boomed. By 1850 New Orleans was referred to as "Queen City of the South"; cotton was its mistress, the port its ticket to world trade.

The Civil War and Reconstruction drastically changed the life-style of the New Orleans area, however, the future of the city's economy had already been determined by events taking place in other areas. The digging of Erie Canal had given the Port of New York a cheap and fast outlet to western trade soon allowing it to surpass New Orleans as the major U.S. port.

The years following the Reconstruction era saw New Orleans expanding on a basis far exceeding other parts of the state. The city limits were extended to the lake and gradually the city's growth spilled over to neighboring parishes. After World War II a construction boom began in New Orleans which has only been slowed by minor economic recessions in the nation's economy.

The New Orleans area has continued to be a "melting pot" of diverse nationalities, religions and attitudes. In recent times a concensus has developed throughout the area that there must be a concerted effort made to preserve the old flavor of the city which

is the partly result of the former diversities and contrasts which used to exist. Historic preservation districts are being formed and citizen groups are working with area officials to create a better life for all.

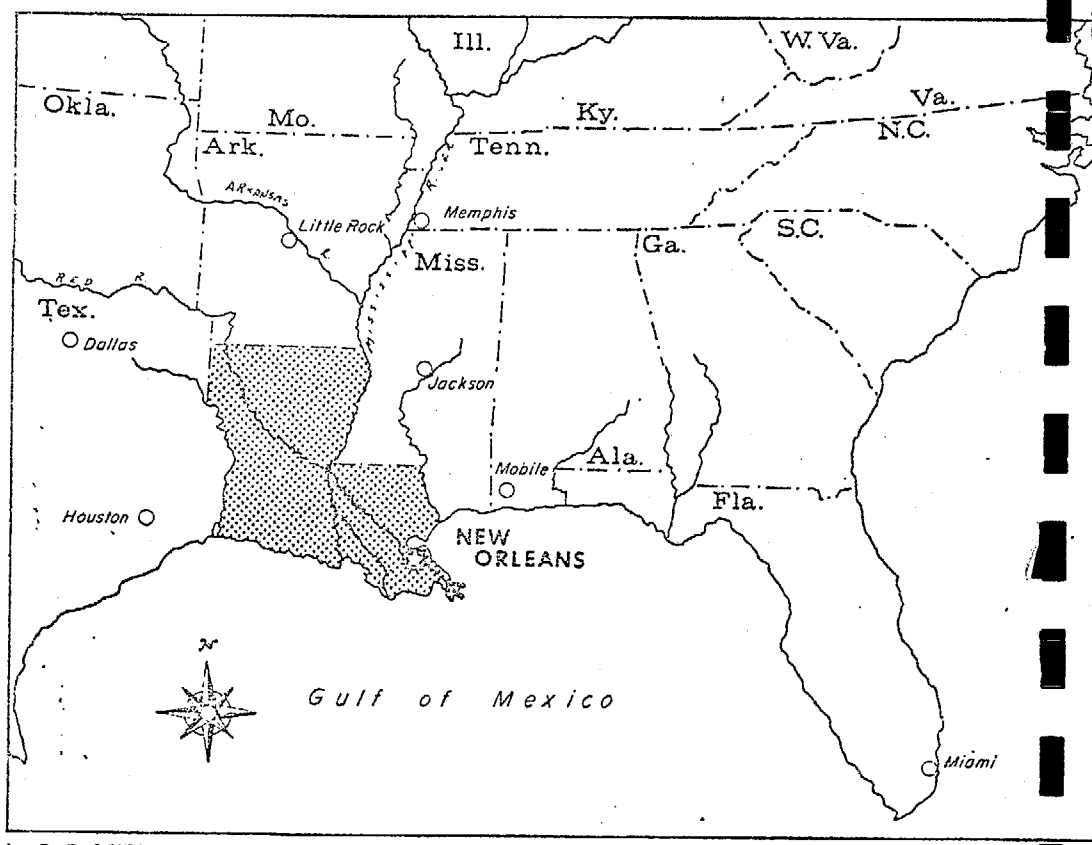
Part of the effort toward preservation and conservation is the coming awareness that tourism ranks high in the city's economy, second only to the port. (This is debated by the tourist commission who ranks it higher). Last year, 1973-74 4.4 million tourists spent $326,000,000 in the New Orleans area and projections are that the industry will increase tremendously in the next few years. Of major importance is the completion of the Superdome, a huge complex whose potential for attracting tourists is yet to be explored. Hotel facilities are increasing and all signs point to a new tourist based economy.

As indicated earlier, the New Orleans' area has always been port oriented in terms of a major economy base. Presently, the port is second in the U.S., and 20% of the employable are "port dependant".

Other economic generators in New Orleans are shipbuilding, mining, and the oil industry. Banking, manufacturing, and construction are also vital contributors to the areawide economy.

Many of the aforementioned industries are either directly or indirectly related to the fact that New Orleans is within the coastal zone. The seafood industry, however, not only depends on being within the coastal zone but also depends upon the health of the coastal zone. Ironically, the seafood industry (with its strong economic link to tourism) is probably the most difficult to document. Equally difficult to document is the recreational value of coastal shores, lakes, islands and marshlands. Increased yearly boat registrations signify that the demand for these resources is growing. On the other hand, tourists seeking water related recreation have little or no opportunities other than the passive and strongly promoted river and bayou cruises. Therefore, the potential exists for increasing tourism through the expansion of water-related activities.

The steady growth of the New Orleans area seems to indicate that there are additional benefits of living in the Coastal Zone. Of particular interest, though difficult to define, is the personal aesthetic value. The ability to experience a sub-tropical climate, participate in and view outdoor sports year-round, to enjoy outdoor cultural activities, festivals, celebrations, coastal scenery and wildlife and values of the Coastal Zone which surely balance or perhaps outweigh the adversities associated with Coastal Zone living.



LOCATION OF NEW ORLEANS

2

Environmental Characteristics

Geologic History

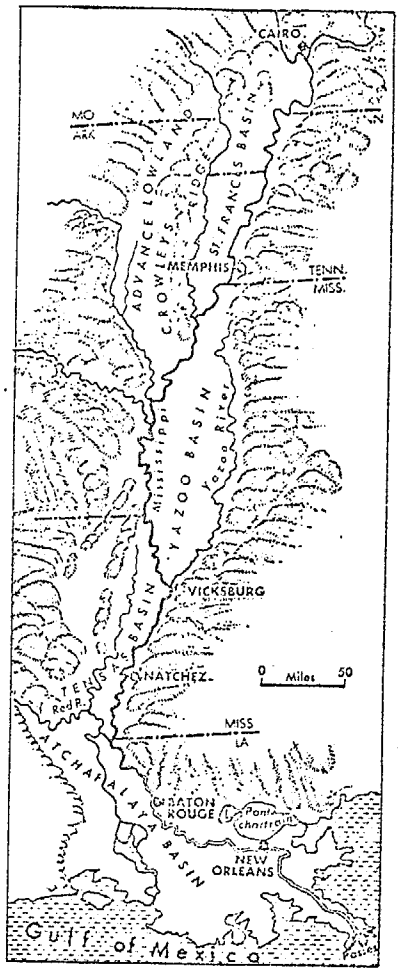
New Orleans is located in the lower Mississippi River basin, an area containing a large number of marsh-estuary systems. The principal marsh-estuary system in which New Orleans lies is the Maurepas-Pontchartrain-Borgne System; the second most productive estuary system in Louisiana.

The geologic setting of the city is the Gulf Coast Region which physiographically, is a part of the continental coastal plain which extends generally from Massachusetts to Tampico, Mexico. The average width of the coastal plain is 250 miles, but the Mississippi embayment extends inland some 575 miles from the Delta to Cairo, Illinois (Coastal Environment, Inc., 1972).

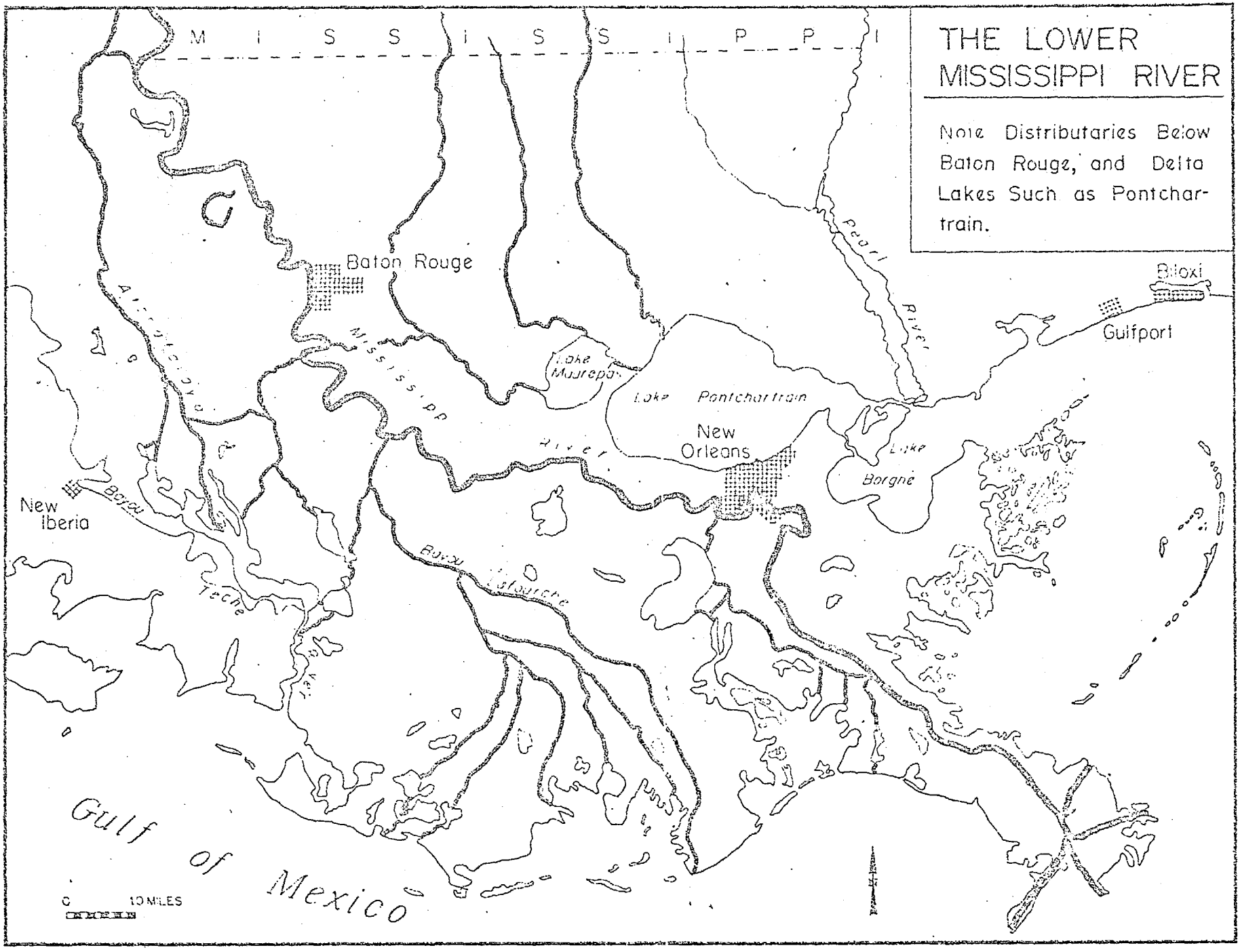
The coastal plain was formed over a period of at least 200 million years and is the result of an interaction of several geologic processes including changes in sea levels, fluvial, lacustrine and marine deposition, and location on the continental margin. Extensive downwarping has occurred in the Gulf Coast Plain as a result of tectonic movements of the crustal plates and sediment deposition.

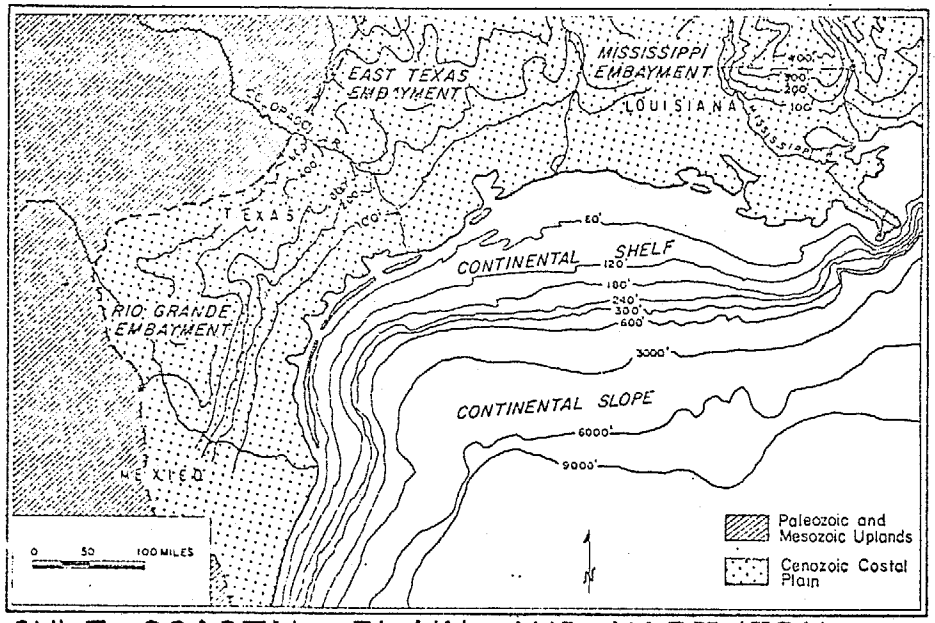
River borne sediments consisting of sand, silt, and clay have been deposited into the sea resulting in a gradual deltaic buildup which has slowly encroached seaward from relatively high ground and extended outward toward the margins of the continental shelf. Coastal Louisiana and New Orleans are situated upon this wedge of sediment. Sediments have, in conjunction with tectonic movements, forced a downwarping of the Mesozoic Basement complex. This Gulf Coast geosyncline passes through the Louisiana Gulf Coast, directly under the New Orleans area. Associated with the geosyncline are zones of active faulting resulting from the pressure exerted by the weights of the sediment deposits.

Both faulting and subsidence occurred contemporaneously with depositional processes. Deep seated beds of salt, related to an ancient Jurassic sea, and thick marine shale units have been deformed by differential loading pressures causing additional movements. These movements often initiate zones of weakness which persist as sediment continues to accumulate above them producing growth faults. These normal faults characterized by increased throw with depth and across which, from the upthrown to the downthrown block, there is a great thickness of correlative section. Growth faults are one of the primary adjustments to sediment accumulation in the basin. Hence they strike parallel



MISSISSIPPI ALLUVIAL PLAIN BELOW CAIRO, ILL. (After Powers, 1966)


THE LOWER MISSISSIPPI RIVER
Note Distributaries Below Baton Rouge, and Delta Lakes Such as Pontchartrain.
M I S S I S S I P P I
Baton Rouge
Biloxi
Gulfport
Pearl River
Lake Pontchartrain
New Orleans
Lake Borgne
New Iberia
Bayou Teche
Bayou Lafourche
Gulf of Mexico
0 10 MILES



GULF COASTAL PLAIN AND NORTHERN GULF OF MEXICO

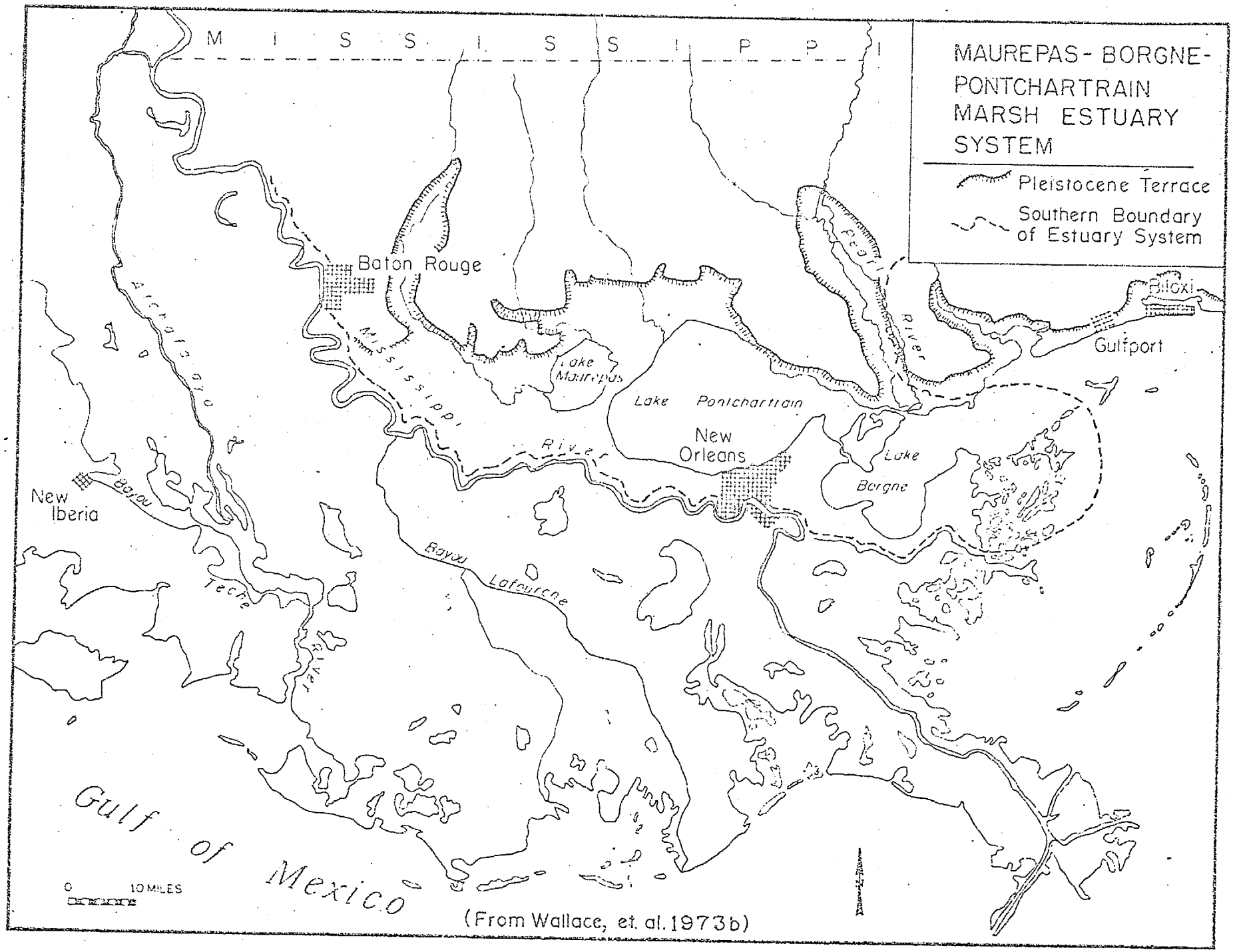
to the geosynclinal axis and are almost invariably downthrown on the gulf side. Faults along the north shore of Lake Pontchartrain and underlying the lake itself are related to the regional pattern of normal growth faulting. Surface displacement of relatively modern surface features, such as beach ridges and old meander scars of streams in the area north of Lake Pontchartrain attest to the fact that some of these faults have been active within late Quaternary items (probably within the last 5,000 years).

Maximum surface displacement is found along the north shore of Lake Pontchartrain where eighteen feet of surface displacement can be documented. Two minor faults trend northeast-southwest through the study area. One of these has a near-surface displacement of five feet. Two additional faults converge near the confluence of Chef Menteur Pass and Lake Pontchartrain. Both of these faults are known to have a near-surface displacement(offset of the top of the Pleistocene) of approximately ten feet.

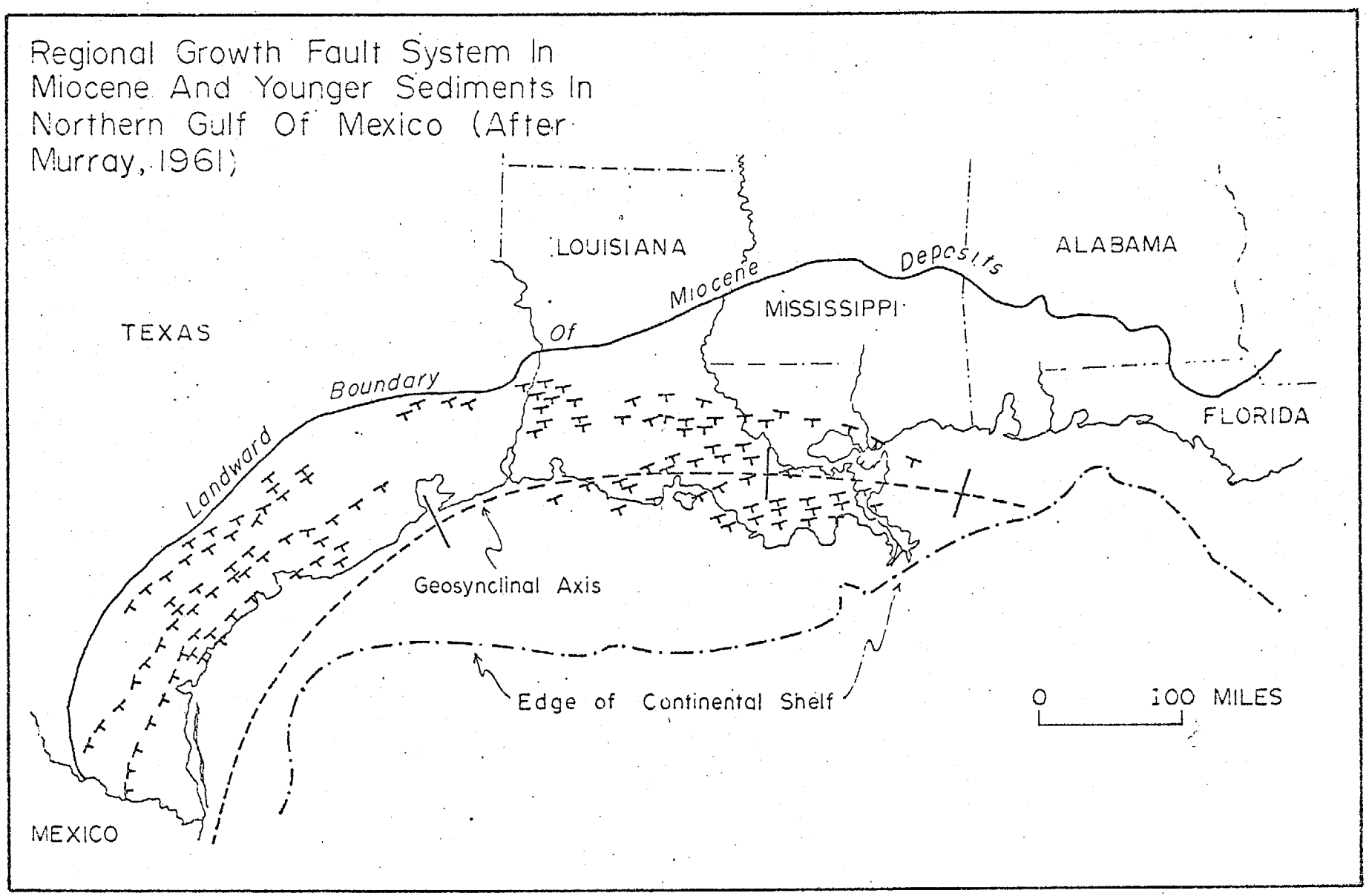
The gulf basin is exceptionally rich in subsurface mineral deposits (oil, gas, salt and sulphur). These most commonly occur in commercial quantities where some structural trap favors their accumulation (i.e. salt dome or fault). The nearest known oil and gas fields are Unknown Pass, a few miles east of the study area, and the Goose Point Field in Lake Pontchartrain to the north.

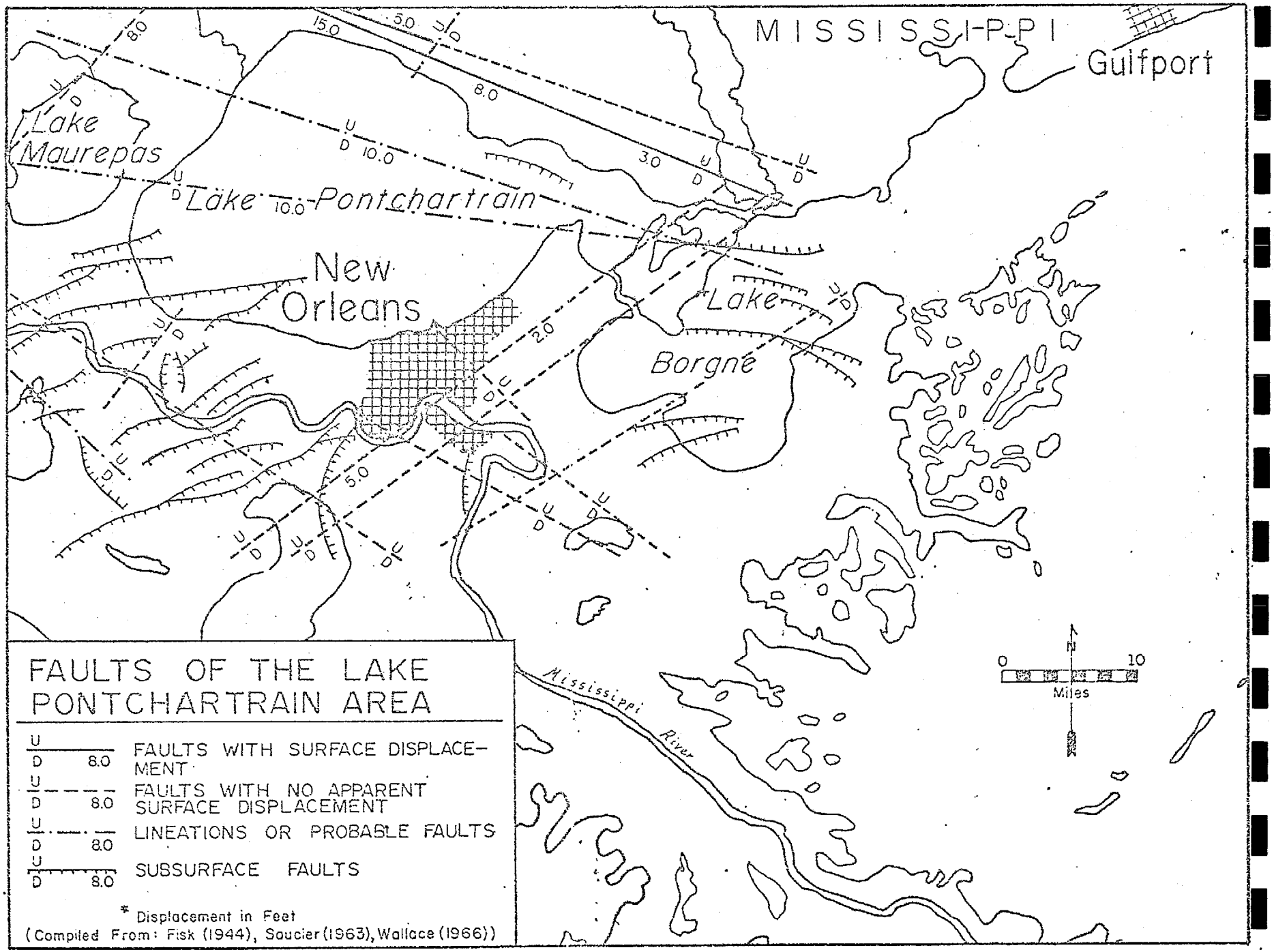
The nature of the sedimentary deposits in the New Orleans area are important in considering urban and semi-urban land uses (Coastal Environments, Inc. 1972). The most important of these deposits in the land use context are the ancient sedimentary deposits of Pleistocene age designated as pre-prairie and prairie (Coastal Environment, Inc., 1972). According to the Coastal Environments report (p. 8), "These formations have the best foundation characteristics in the region. They were deposited more than 50,000 years ago when sea level stood at approximately the same level as it does today. The deposits, consisting of consolidated sands and silty and organic clays, are found at the surface on the north shore of Lake Pontchartrain but slope down and become deeply buried by more recent deposits .

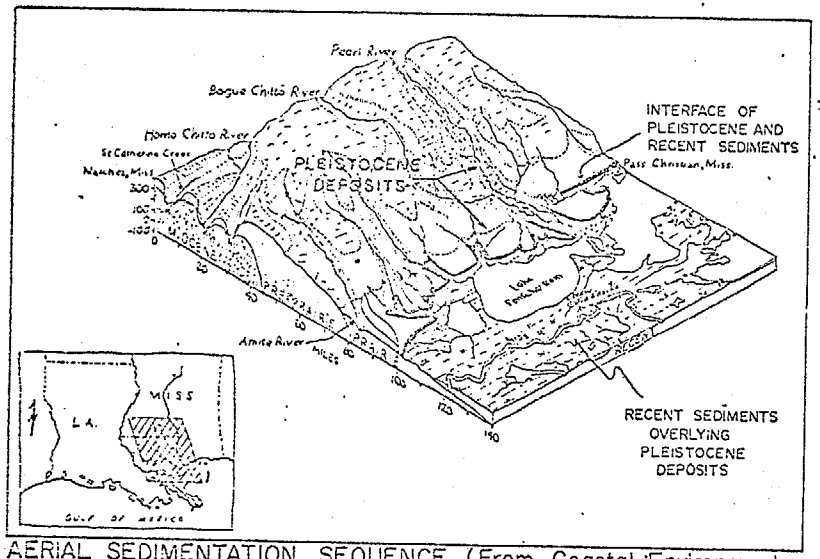
To understand the evolution of the parish one must visualize the sea as fluctuating in level over long periods of time. About 50,000 years ago sea level was lowered approximately 300 feet in response to continental glaciation. It began to rise some 40,000 years ago and reached its present level again about 30,000 years ago. During these falling, lowered and rising stages, the prairie formation was exposed to weathering and a deep crust was formed. During the process of sea level change regional



(From Wallace, et. al. 1973b)


Regional Growth Fault System In Miocene And Younger Sediments In Northern Gulf Of Mexico (After Murray, 1961)
LOUISIANA
MISSISSIPPI
ALABAMA
FLORIDA
TEXAS
MEXICO
Miocene
Deposits
Of
Boundary
Landward
Geosynclinal Axis
Edge of Continental Shelf
0
100 MILES


MISSISSIPPI
Gulfport
Lake Maurepas
Lake Pontchartrain
New Orleans
Lake Borgne
Mississippi River
0
10
Miles
FAULTS OF THE LAKE PONTCHARTRAIN AREA
FAULTS WITH SURFACE DISPLACEMENT
FAULTS WITH NO APPARENT SURFACE DISPLACEMENT
LINEATIONS OR PROBABLE FAULTS
SUBSURFACE FAULTS
* Displacement in Feet
(Compiled From: Fisk (1944), Saucier (1963), Wallace (1966))



AERIAL SEDIMENTATION SEQUENCE (From Coastal Environments, Inc. 1972)

tilting also occurred. When sea level had re-established itself an uplifted portion of the prairie formation remained high and dry forming the north shore of Lake Pontchartrain.

During the period 30,000 years ago when sea level was high, shallow marine deposits accumulated in the area that would become in the New Orleans Metropolitan Area. These deposits extended gulfward from approximately the north shore of Lake Pontchartrain. About 25,000 years ago sea level was again lowered 300 feet because of glaciation and the marine deposits were exposed to weathering; a crust was formed on their surface. This surface and the prairie formation dip from the north shore of Lake Pontchartrain beneath the New Orleans...urban region at depths of 21 to over 120' below the surface. It is these formations that form the most important foundation bearing strata in the area.

During the last phases of recent sea level rise, from about 7000 to 4000 years ago, the region again underwent significant changes that set the stage for the formation of the present land mass of the parish. The location of land mass of today was open gulf. Sand deposits winnowed from eroding Pleistocene deposits and introduced to the coast by the Pearl River were reworked and redistributed to form a series of sand spits and islands along what is now the south shore of Lake Pontchartrain. These were similar to the islands that now lie off of the Mississippi Coast.

The vertical structure of the parish consists then of great thicknesses of ancient marine and riverine sediments over which lay thinner sequences of more recent deposits that form the actual land mass of the parish. At depths of up to 40,000 feet is a basement layer perhaps 200 million years old. On this are 40,000 feet of sediments 50,000 to 7,000 years old with only the last 50 to 100 feet of an age less than 4000 years. Formation of the parish itself within this relatively recent time frame is discussed in the next portion of the report.

As a result of its formative processes and location, the region is very active techtonically. Both faulting and subsidence occur as adjustment to depositional processes. As material is deposited the earth's surface constantly adjusts to, and becomes deformed by differential loading pressures. These movements occur along zones of weakness which persist even as sediment continues to accumulate above them and produces growth faults. The faults strike parallel to the axis of the geosyncline and are almost invariably downthrown on the gulf side. Their location is important in relationship to building of structures, affect upon marsh subsidence, and location of canals and associated construction. Fault activity, although not as dramatic as that in places like California, nevertheless indicates that the region is extremely active and that change is present".

Studies conducted in coastal areas throughout the world suggest that sea level reached its present stand about 3200 years ago. Since that time only very minor fluctuations of the ocean levels have occurred. However, there has been a continuing change in relative positions of land and sea in coastal Louisiana. With few exceptions the wetlands area is sinking. A number of factors contribute to the apparent vertical movements in land and sea. Kolb and Van Lopik (1958) identify the primary factors as follows:

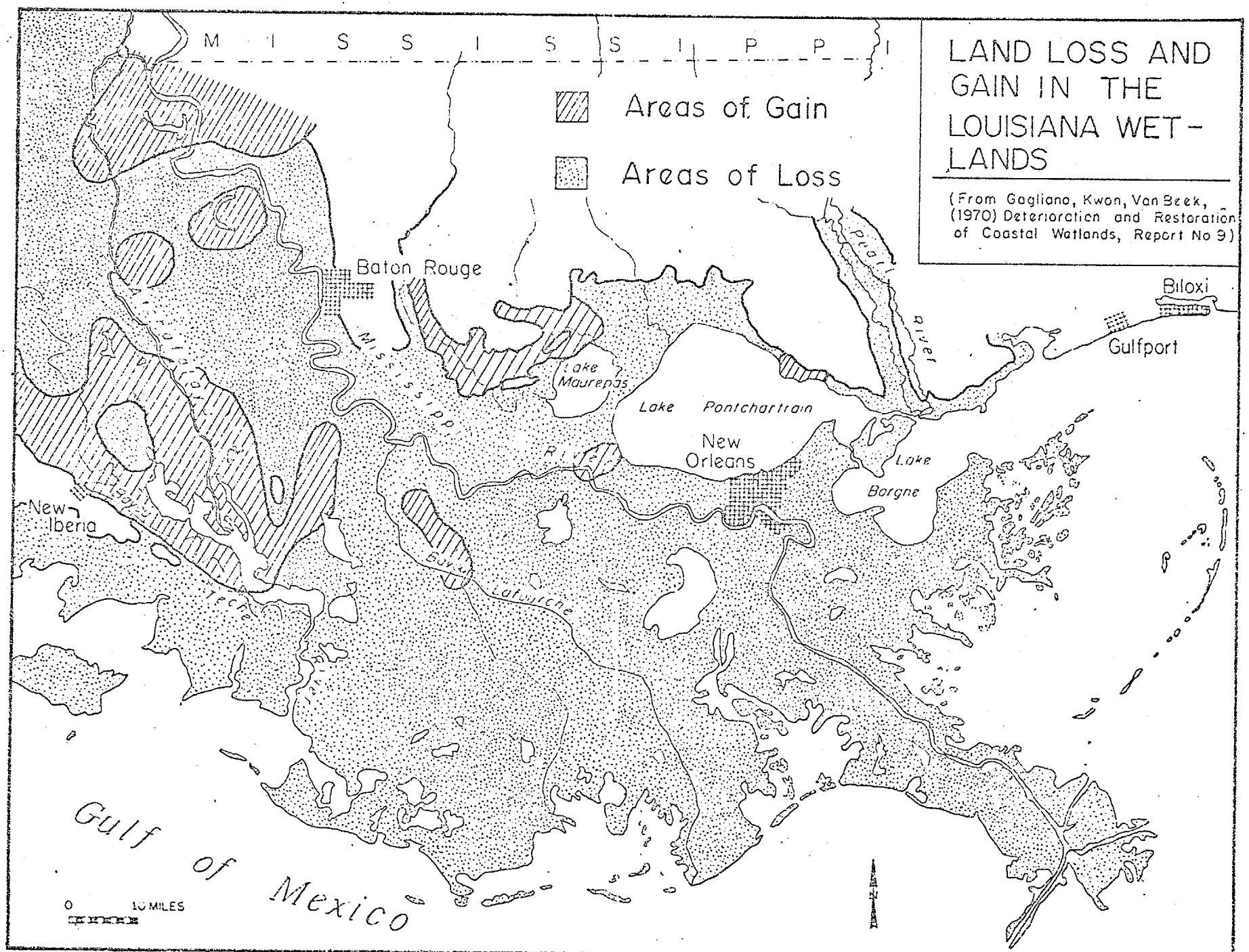
A. True or actual sea level rise

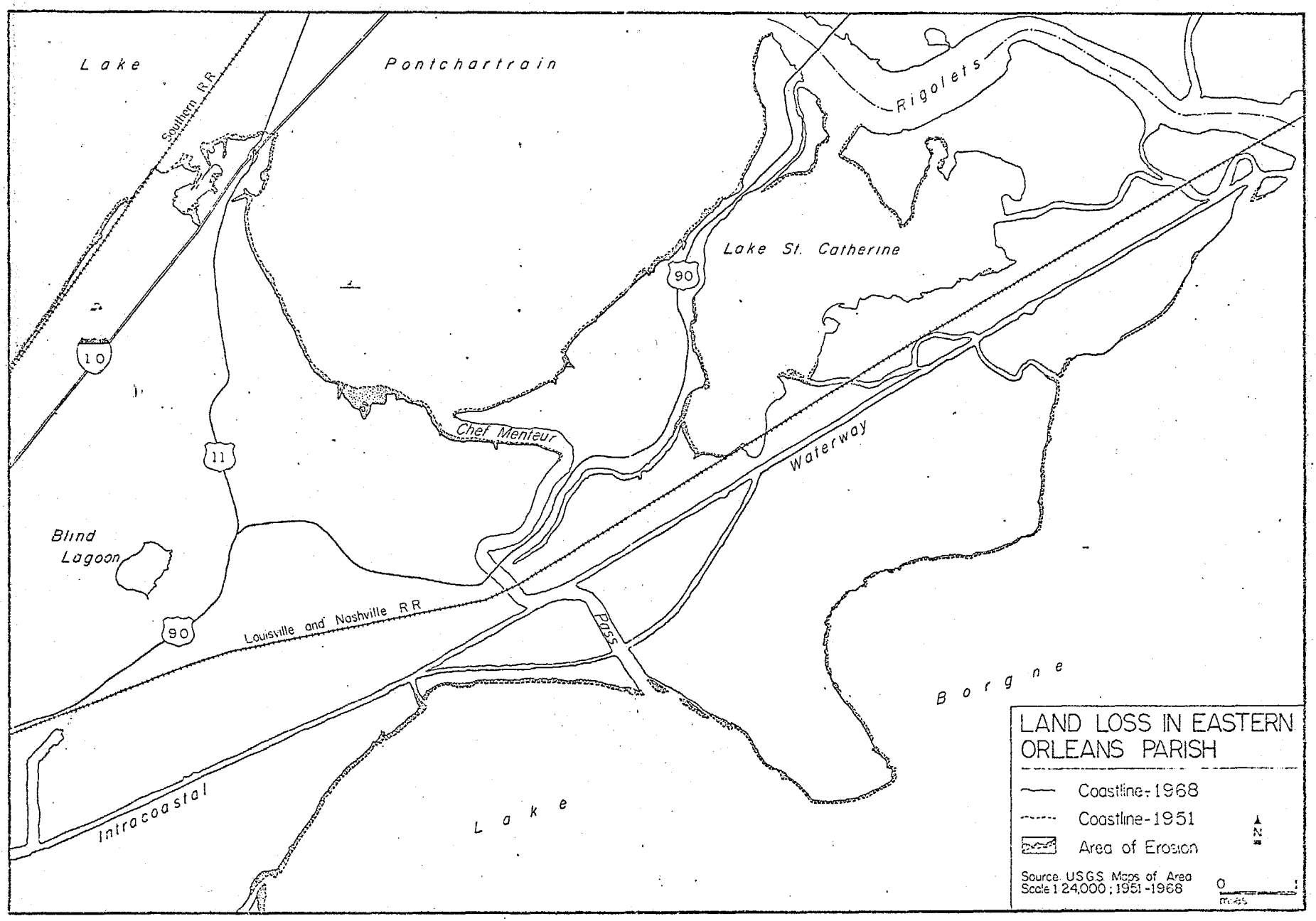
B. Consolidated of sediment of the Gulf Coast geosyncline
   1. Pleistocene and pre-Pleistocene sediments
   2. Recent sediments

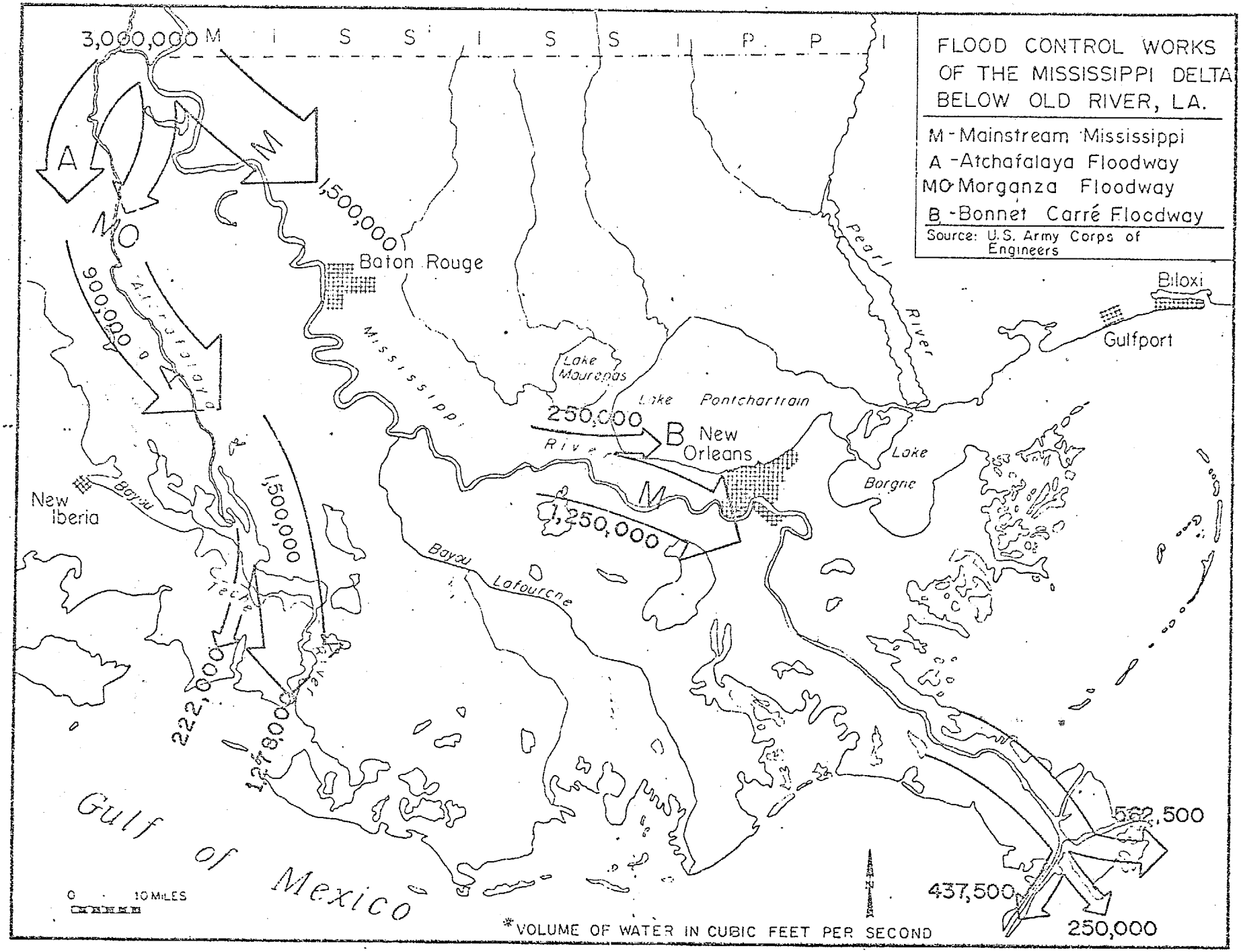
C. Local consolidation

   1. Consolidation caused by weight of minor landforms
   2. Consolidation caused by weight of man-made structures

D. Basement sinking caused by sediment load and/or subcrustal flow


LAND LOSS AND GAIN IN THE LOUISIANA WET-LANDS
(From Gagliano, Kwon, Van Beek, (1970) Deterioration and Restoration of Coastal Wetlands, Report No 9)
Areas of Gain
Areas of Loss
M I S S I S S I P P I
Baton Rouge
Biloxi
Gulfport
Lake Maurepas
Lake Pontchartrain
New Orleans
Lake Borgne
Pearl River
Mississippi River
New Iberia
Teche
Bayou Lafourche
Gulf of Mexico
0 10 MILES


Lake
Pontchartrain
Southern R.R.
Rigolets
Lake St. Catherine
90
10
11
Chef Menteur
Waterway
Blind
Lagoon
Louisville and Nashville R.R.
90
Pass
Borgne
Intracoastal
Lake
LAND LOSS IN EASTERN ORLEANS PARISH
Coastline-1968
Coastline-1951
Area of Erosion
N
Source USGS Maps of Area
Scale 1:24,000 ; 1951-1968
0
miles


FLOOD CONTROL WORKS OF THE MISSISSIPPI DELTA BELOW OLD RIVER, LA.
M - Mainstream Mississippi
A - Atchafalaya Floodway
MO Morganza Floodway
B - Bonnet Carré Floodway
Source: U.S. Army Corps of Engineers
3,000,000
M I S S I S S I P P I
A
MO
1,500,000
Baton Rouge
900,000
Atchafalaya
Mississippi
Lake Maurepas
Lake Pontchartrain
250,000
B
New Orleans
River
Pearl River
Biloxi
Gulfport
Lake Borgne
M
1,250,000
New Iberia
Bayou Teche
1,500,000
Bayou Lafourche
222,000
125,000
Gulf of Mexico
562,500
437,500
250,000
0 10 MILES
*VOLUME OF WATER IN CUBIC FEET PER SECOND

E. Tectonic activity

All of these factors contribute to subsidence within the study area. Radiocarbon dating of buried peat deposits indicate that the average rates for coastal Louisiana amount to 0.35 feet/century (Gagliano and Van Beek, 1970). Local rates as high as 10 to 16 feet per century have been reported (Kolk and Van Lopik, 1968). Saucier (1963), reports an average subsidence rate of 0.39 feet/century for the Pontchartrain Basin.

Local subsidence of drained wetlands areas in coastal Louisiana is a well known phenomena. When backswamp peats and highly organic clays are drained they shrink and oxidize. Sometimes logs and other organic constituents actually burn. These processes result in a significant lowering of the land surfaces. Some areas within the city limits of New Orleans are 12 feet below mean gulf level. Elevations of more than five feet below the datum are common. It can be anticipated that within a few years after drainage most of the Eastern New Orleans area will be from three to five feet below gulf level.

The upper 50 feet of sedimentary deposits underlying the study area have accumulated during late Quaternary times (the last 30,000 years). Events significant in consideration of foundation conditions, ground water and surface morphology are as follows:

1. more than 50,000 years B. P. - Deposition of the late Pleistocene Prairie formation. Sea level stood at approximately the same level as it does today. Sediment composing the formation was deposited in deltaic plain and marginal deltaic basin environments. Poorly consolidated sands, silty clays, and organic clays predominate.

2. 50,000 - 30,000 years B. P. - Sea level was lowered approximately 300 feet as a result of continental glaciation. It began to rise again some 40,000 years ago and approximated its present stand again about 30,000 years ago. During these falling, lowered, and rising stages the prairie formation was exposed to weathering processes and a deep weathered soil profile or crust was formed. This weathered crust is very firm and constitutes one of the major foundation horizons below the study area. During these intervals of sea level fluctuation regional tilting of the prairie formation occurred. When sea level re-established itself at a high level during the interstadial approximately 30,000 years ago an uplifted segment of the prairie formation north of Lake Pontchartrain remained high and dry, forming the coastwise prairie terrace.

3. 30,000 - 25,000 years B. P. - Sea level was at approximately its present stand. A gulf shoreline with sandy beaches as well established through what is presently the northern half of Lake Pontchartrain. Shallow marine sediment accumulated in the vicinity of the study area above the weathered crust marking the top of the prairie formation. This wedge of sediment extending seaward from approximately the northern shore of Lake Pontchartrain is designated as the Deweyville formation.

4. 25,000 - 7,000 years B. P. - Sea level was again lowered some 300 feet in response to continental glaciation. As in step 2, a weathered crust formed on top of the Deweyville formation. However, this crust is neither as thick or as well indurated as the one marking the top of the prairie formation and in some places may be completely removed by erosion. However, this soil zone or crust forms one of the single most important foundation bearing strata in the area. It is referred to in several diagrams and maps as the "top of the Pleistocene". In the study area it forms a gently undulating surface ranging in depth from approximately 55 feet to less than 20 feet.

5. 7,000 - 4,000 years B. P. - During the last phases of the recent rise of sea level the study area underwent significant morphological changes. Sand deposits winnowed from eroding Pleistocene deposits and introduced to the coast by the Pearl River were reworked and re-distributed to form a series of sand spits and islands trending southwest from the present position of the Pearl River mouth into the New Orleans area. A major barrier island trend was established which separated the open gulf from a sheltered sound on its northern side. The end product was a major body of relatively clean, well sorted fine to coarse sand. The barrier island sand outcrops at Pine and Little Oak Islands and slopes gently both north and south. At the shore of Lake Pontchartrain it lies 20 to 25 feet below mean gulf level and at the Intracoastal Waterway it is about 45 feet below that datum. This unit is important both from the standpoint of foundations and as a source of sand fill. It was used as a source of sand fill for the Interstate-10 foundation through the Pontchartrain Ne New Town tract. The sands are permeable and porous and may constitute a minor fresh water aquifer.

6. 4,000 - 700 years B. P. - During this interval a major deltaic lobe of the Mississippi River developed in the area (St. Bernard Delta Complex). A sequence of prodelta, lacustrine and delta front deposits introduced through active river distributaries were defined and natural levee ridges emerged. The

natural levee ridges along Bayou Sauvage and Turtle Bayou developed during this interval. Mudflats developed in floodbasin or interdistributary areas and were soon colonized by marsh grasses. The Pontchartrain Basin was divorced from the gulf and Lake Pontchartrain was formed. Evidence of prehistoric Indian occupation is found from this interval in shell heaps or middens in the area.

7. 700 B.P. - 1720 A.D. - The Mississippi River diverted its course to the west and the St. Bernard Delta Complex was abandoned. River distributaries reverted to minor tidal streams and their channels became largely clogged and filled, but deposition of organic debris continued in swamp and marsh areas. Peat deposits initiated during the active stage of delta porgradation continued to accumulate in response to subsidence. Divorced from the fresh water inflow of the Mississippi salinities increased and the area took on a distinctive estuarine character.

8. 1720 - A.D. - Present - Men of European culture gradually invaded the area initiating the chain of events that led from the settlement of New Orleans to the current plan for a new community in the Pontchartrain New Town area. At present the area is either completely drained, filled and urbanized or is largely impounded by dikes and partially drained. *

Current Environmental Conditions

New Orleans is subject to the same environmental factors affecting all of Coastal Louisiana. The area is in a subtropical latitude experiencing mild winters and hot humid summers. Prevailing summer winds are southerly and produce conditions favorable to the formation of afternoon thundershowers and sudden squalls. The area is subject to frequent frontal movements during the colder seasons. These frontal movements bring heavy precipitation and sudden temperature changes.

The range of temperature fluctuations can be considered to be moderate. Average summer temperature is 83.1°F; winter average temperature is 56.1°F. Mean annual temperature is 70°F.

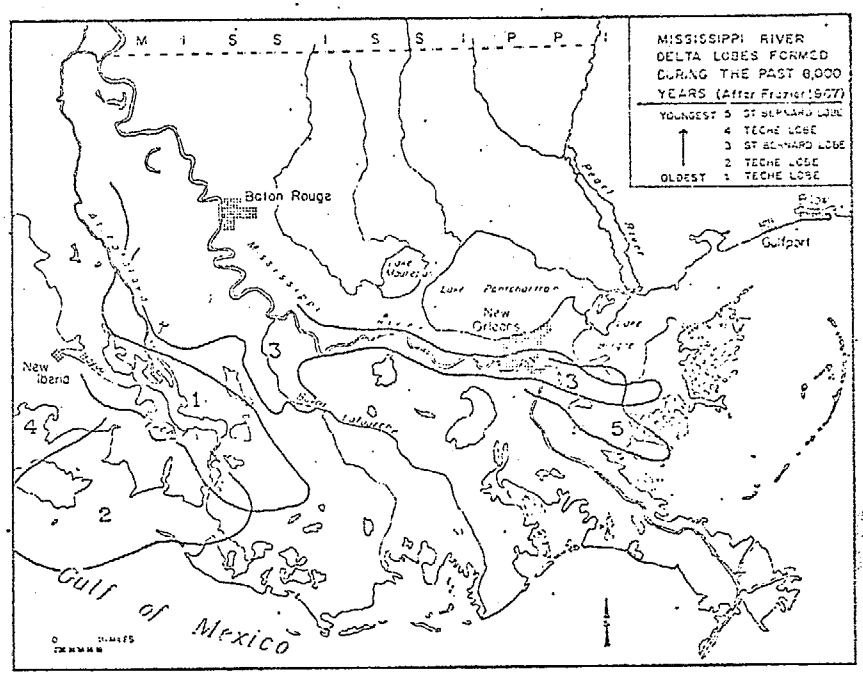
Annual rainfall at New Orleans averages 63 inches. Heavy winter rains generally occur from mid-December to mid-March. Sleet and snow is uncommon.

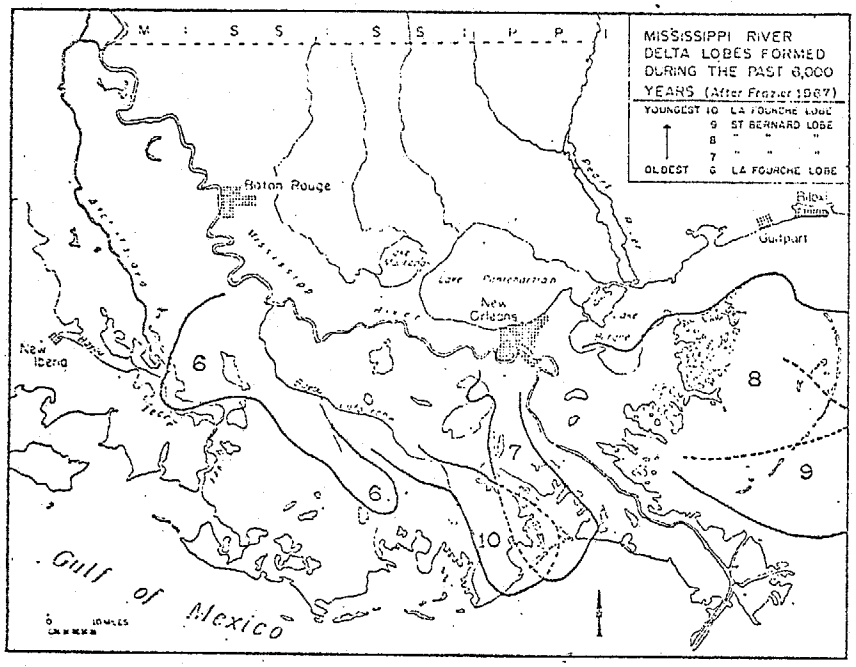
From January through July, prevailing winds are south to southeast and northeast to east-northeast from September through November. Average wind velocity is 8.6 MPH, but often exceeds 100 MPH during hurricanes.

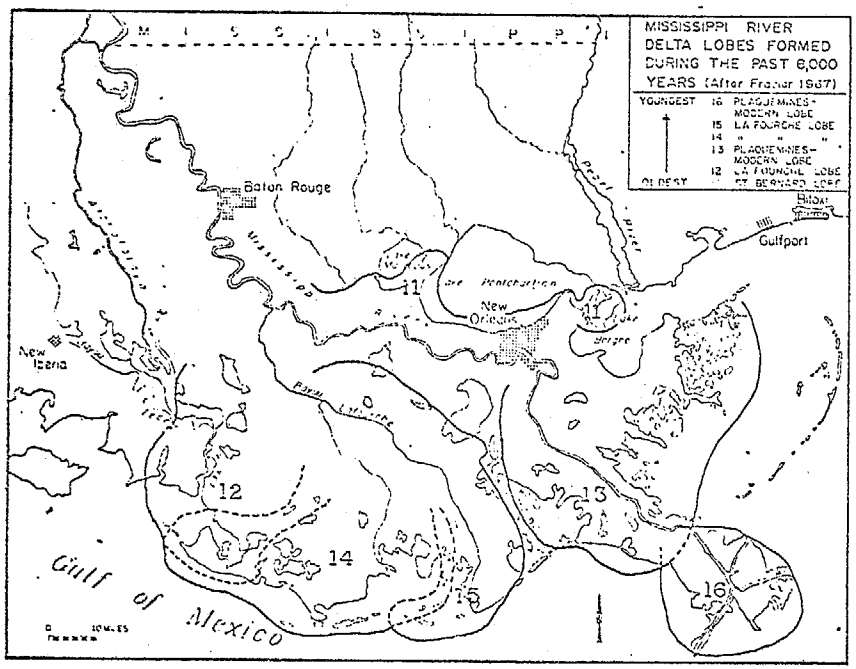
Under normal conditions, the tide in both Lakes Pontchartrain and Borgne is diurnal and has a range of approximately one-half foot, respectively. The Rigolets and Chef Menteur Pass have developed naturally deep and wide channels having adequate capacity for normal tidal flows and for discharge of tributary flow. However, the frequent and often appreciable changes in the water level of Lake Pontchartrain are not primarily caused by periodic tidal variations. Nearly all changes are the result of variations, in the direction, force, and duration of the wind.

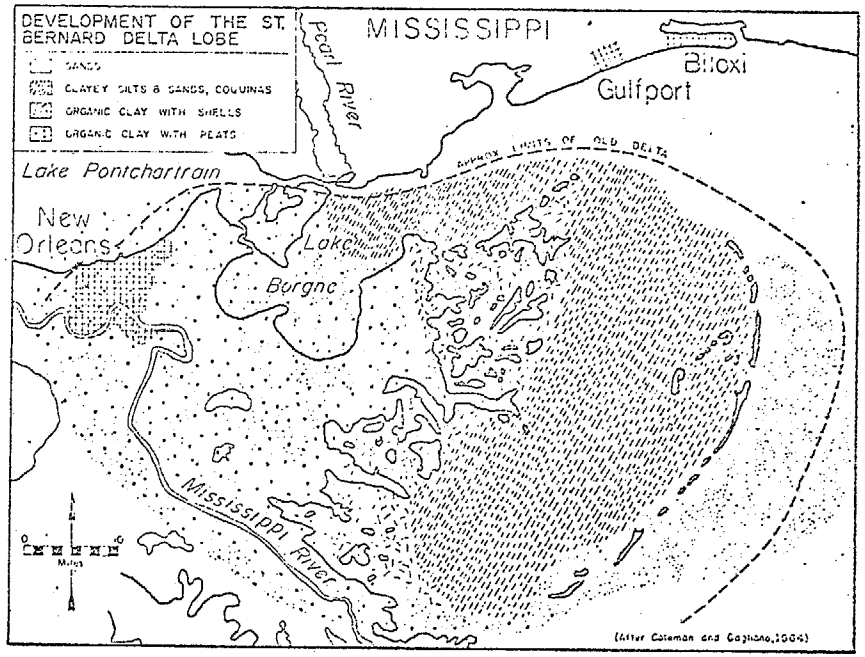
During the winter, when the wind is frequently from the north or northwest, lake levels may average one to two feet lower than during the summer. This is the result of a net movement of water from the lakes into the gulf. Abrupt changes in wind direction, such as those which often accompany the passage of a cold front, may cause a rapid change in lake level. This effect is

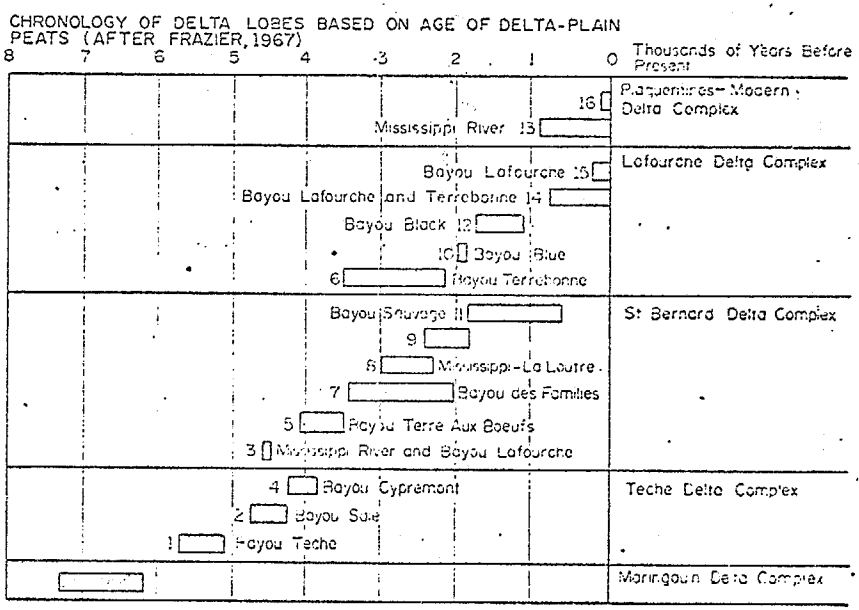
*Morphological sequences herein presented was reproduced from Wallace, (1973a).




MISSISSIPPI RIVER DELTA LOBES FORMED DURING THE PAST 6,000 YEARS (After Frazier 1967)
YOUNGEST
OLDEST
10 LA FOURCHE LOBE
9 ST BERNARD LOBE
8 " " "
7 " " "
6 LA FOURCHE LOBE
Baton Rouge
Gulfport
New Orleans
New Iberia
Lake Pontchartrain
Gulf of Mexico


MISSISSIPPI RIVER DELTA LOBES FORMED DURING THE PAST 6,000 YEARS (After Frazier 1967)
YOUNGEST
OLDEST
16 PLAQUEMINES-MODERN LOBE
15 LA FOURCHE LOBE
14 " " "
13 PLAQUEMINES-MODERN LOBE
12 LA FOURCHE LOBE
ST BERNARD LOBE
Baton Rouge
Gulfport
New Orleans
New Iberia
Lake Pontchartrain
Gulf of Mexico


DEVELOPMENT OF THE ST. BERNARD DELTA LOBE
SANDS
CLAYEY SILTS & SANDS, COQUINAS
ORGANIC CLAY WITH SHELLS
ORGANIC CLAY WITH PEATS
MISSISSIPPI
Pearl River
Biloxi
Gulfport
APPROX. LIMITS OF OLD DELTA
Lake Pontchartrain
New Orleans
Lake Borgne
Miles
Mississippi River
(After Coleman and Gagliano, 1964)


CHRONOLOGY OF DELTA LOBES BASED ON AGE OF DELTA-PLAIN PEATS (AFTER FRAZIER, 1967)
8 7 6 5 4 3 2 1 0 Thousands of Years Before Present
16
Mississippi River 13
Plaquemines-Modern Delta Complex
Bayou Lafourche 15
Bayou Lafourche and Terrebonne 14
Bayou Black 12
10 Bayou Blue
6 Bayou Terrebonne
Lafourche Delta Complex
Bayou Sauvage 11
9
8 Mississippi-La Loutre
7 Bayou des Familles
5 Bayou Terre Aux Boeufs
3 Mississippi River and Bayou Lafourche
St Bernard Delta Complex
4 Bayou Cypremont
2 Bayou Sale
1 Bayou Teche
Teche Delta Complex
Maringouin Delta Complex

evident in winds as low as 5 miles per hour. Easterly winds cause a rise in Mississippi Sound and Lake Borgne, producing an increase in flow through the passes and a subsequent rise in the lake level. Westerly winds have the reverse effect, a rise or fall of six inches in an hour has been observed on the shore of Lake Pontchartrain on several occasions. The effects which hurricanes can have on water levels has already been pointed out. Strong winds and heavy rainfall which occasionally accompany conventional thunderstorms create localized turbulance but have little effect on overall lake levels.

As a result of frequently changing lake levels, strong and irregular currents often characterize the major passes, particularly the Rigolets. The ordinary maximum velocity in this pass is 0.6 knots but extreme velocities of 3.75 knots have been observed. Observations suggest that a slight counter-clockwise circulation may be present in Lake Pontchartrain. However, the currents are affected by the volume of fresh water inflow (estimated to average 5 million acre-feet annually), tides and storm surges which cause enormous volumes of water to pass in both directions through the Rigolets, Chef Menteur Pass, Lake Borgne, Mississippi Sound, the Inner Harbor Navigational Canal, and the Mississippi River-Gulf Outlet. With so many variables operating on the several elements of the system, the current patterns are continually changing.

The salinity of Lake Pontchartrain averages less than six parts per thousand but varies widely with location and season. Least salinity occurs in the northwestern portion of the lake during the winter and spring months. Values as low as 1.2 parts per thousand (following a heavy January rainfall) and as high as 18.6 parts per thousand (following a September tropical storm) have been observed in the lake.

The salinities in Lake Borgne are generally higher than that of Lake Pontchartrain due to lesser fresh water flows and closer proximity to the Gulf of Mexico. Average yearly salinity in the wet year (1962) was 2.4 ppt., while in the dry year (1963) salinities averaged 11.1 ppt. These years represent the probable extremes of salinity.

Water temperature in Lake Pontchartrain and Lake Borgne are moderate and ice is rare. In Lake Pontchartrain average temperatures range from a high of 30 degrees C (86°F) in August to a low of 10.5 degrees C (50.9°F) in January. In Lake Borgne, average highs of 32 degrees (89.6°F) in July and lows of 9 degrees C (48.2°F) in February are recorded.

New Orleans, located near the coast in the wildlife state, is of natural, logical, and peculiar importance in a conservation, and ecology program, not only of the south, but of the entire nation, since through it pass or in it there remain during the winter, so vast a part of the migratory bird life of the entire continent. A vast proportion of the migratory game birds of North American are harbored in Louisiana's great game preserves-near New Orleans.

The physical characteristics of Louisiana, and especially of the environment of New Orleans, provide a remarkable setting for the City of New Orleans. There are large areas within the city limits which are sparcely settled and which abound with wildlife and where excellent game fishing may be pursued. And because of the close proximity of the marshlands to the city, markets are provided the fishing, oyster, fur and forestry industries.

There are seven million acres of marsh land within the proximity of New Orleans connected by hundreds of lakes and waterways where fisheries, oyster beds, game and fur trapping exist.

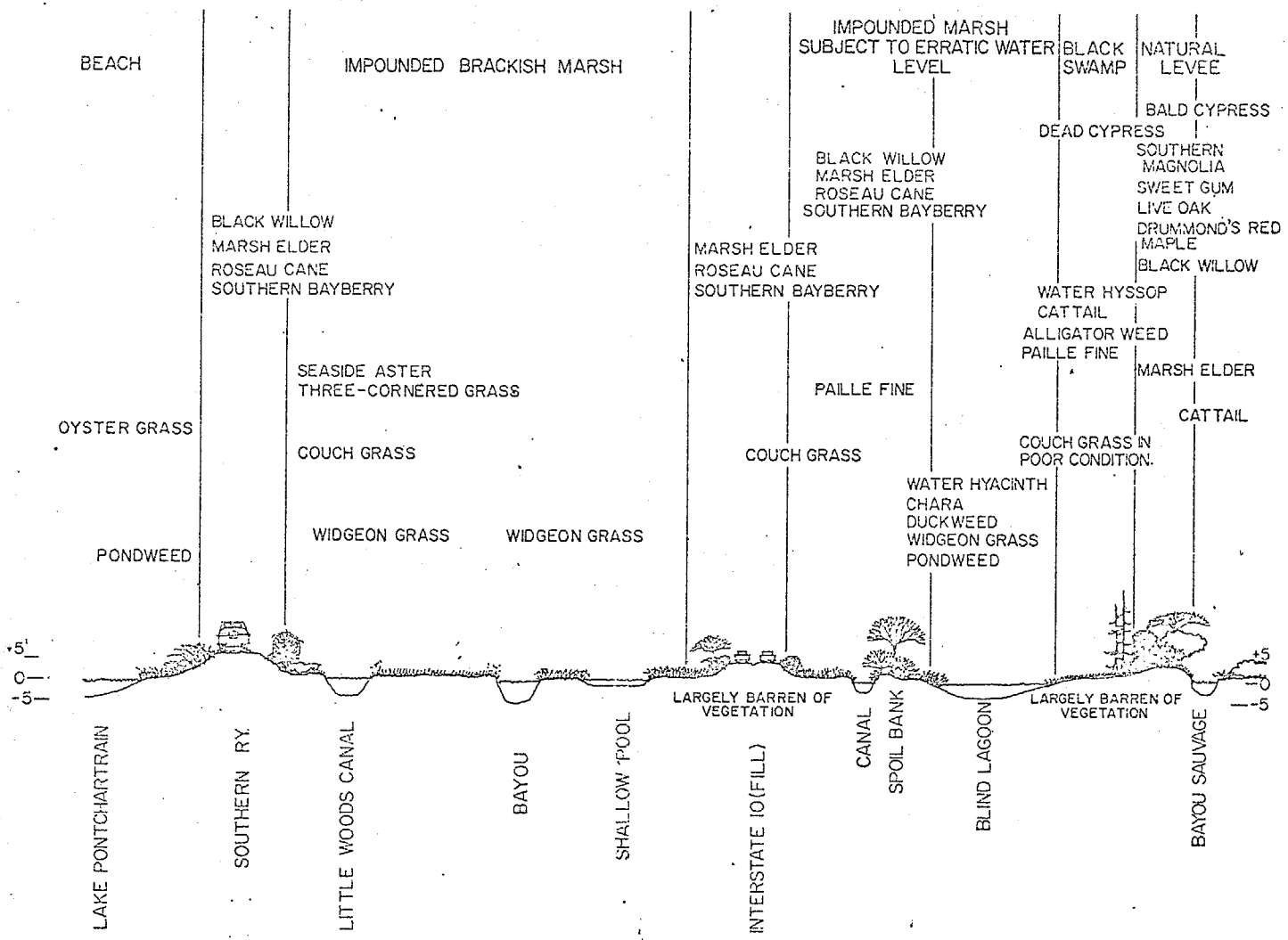
The total gross acreage of the State of Louisiana constitutes nineteen million, two hundred thousand acres.

The marshlands or wetlands of Coastal Louisiana surrounding New Orleans can be divided into fresh water marshes and salt water marshes, based upon the salinity of the soil, water and the vegetation in general. The fresh water marshes border on cypress swamps, so that occasional bald cypress trees extend into the marsh which supports cattail, need cane, Phragmites, arrowhead, pickerel weed, water millet, giant bullrush paille fine; willow thickets are common.

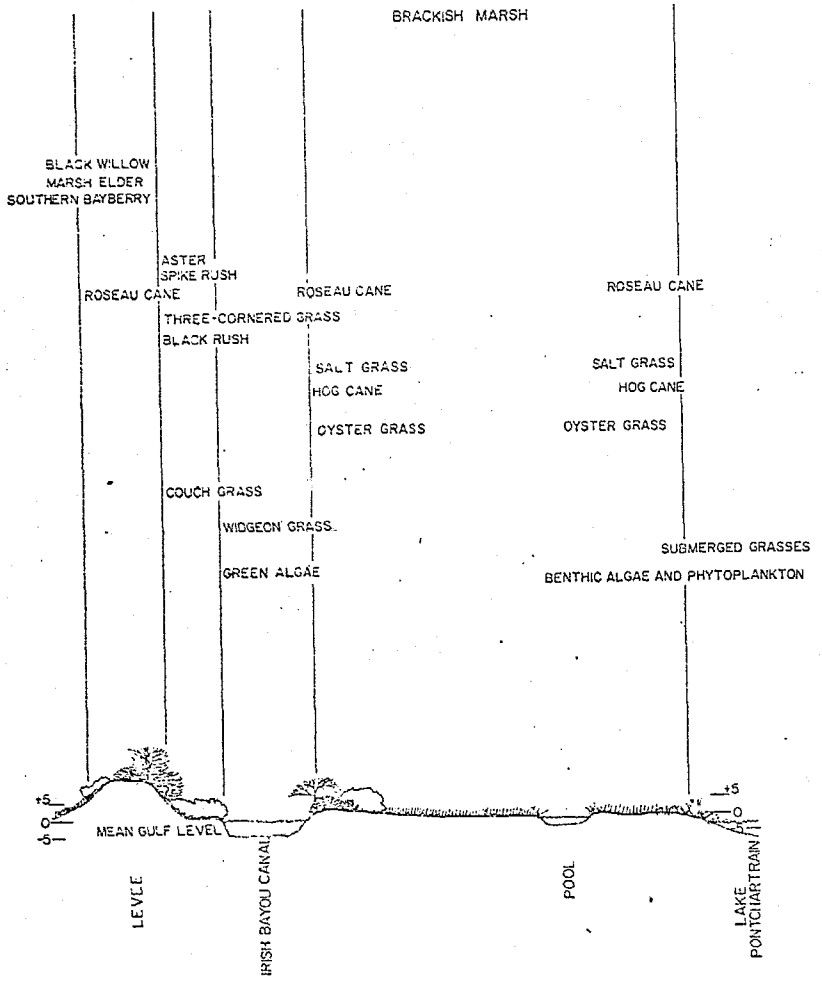
The salt marshes are extensive and consist of salt marsh grass, couch grass, big and little cord grasses, and black rush. Some of the common woody plants that grow on the raised bank, ridges, etc., are the live oak, toothache tree, hackberry, hawthorns, opponax, marsh elder, Baccharis, and salt matrimony-vine.

The functioning of the coastal marsh ecosystem is complex and diverse. The ecosystem is maintained by the inter-relationship of a full range of terrestial and aquatic flora and fauna, and extremely important water exchange processes. The few species considered "valuable" to man for commercial or sports activity represent merely a small minority of life forms in the marsh. They are, for the most part, a select group near the top of the

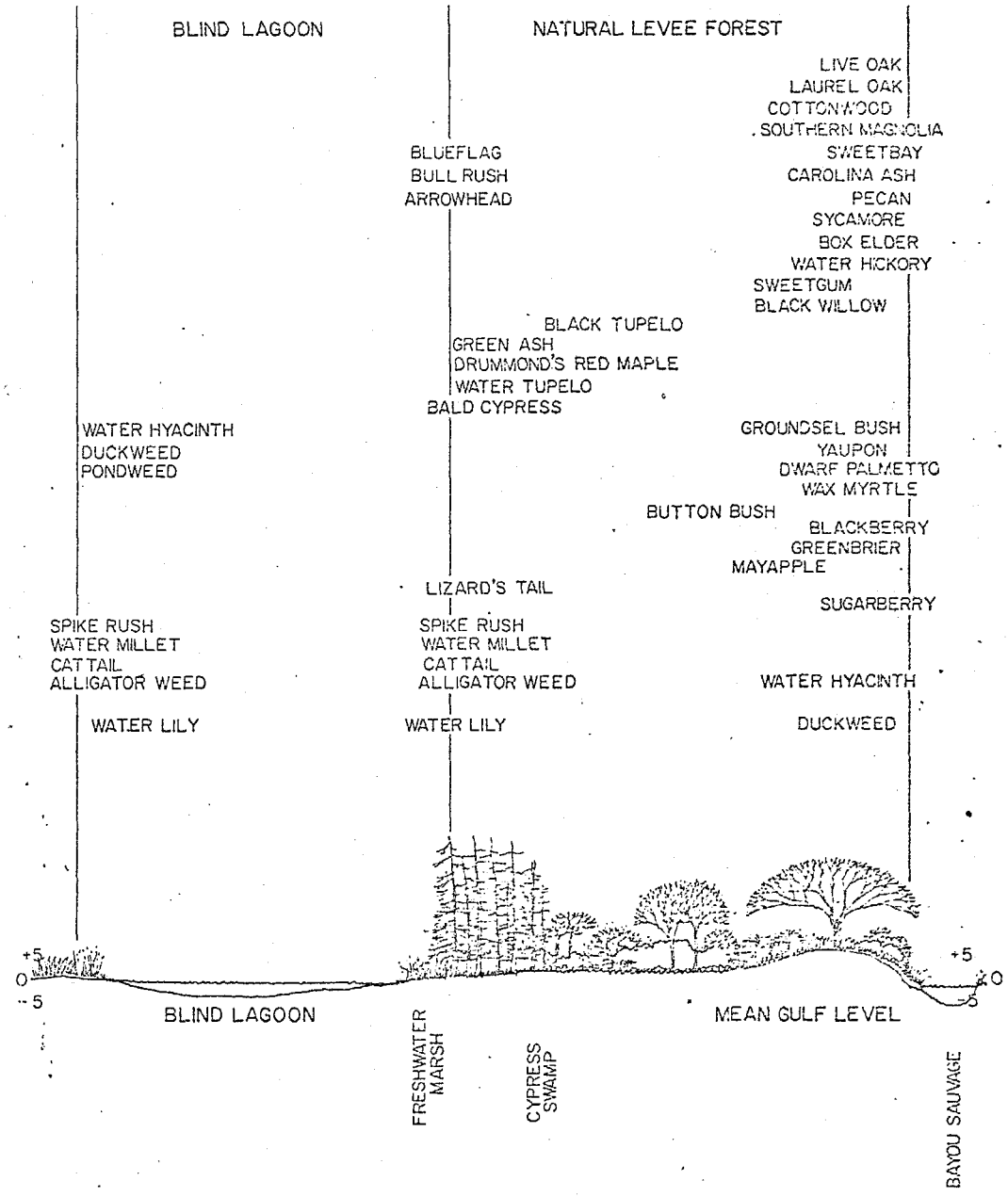
SCHEMATICIZED DISTRIBUTION OF FLORA
(From Wallace, et. al., 1973 a)



DIAGRAMMATIC TRANSECT FROM IRISH BAYOU TO LAKE PONTCHARTRAIN SHOWING EXISTING BRACKISH MARSH, OPEN TO TIDAL FLOW
(FROM WALLACE, ET. AL. 1973A)



DIAGRAMMATIC TRANSECT FROM LAKE PONTCHARTRAIN TO BAYOU SAUVAGE SHOWING EXISTING MARSH CONDITIONS
(FROM WALLACE, ET. AL., 1973A)



DIAGRAMMATIC TRANSECT FROM BLIND LAGOON TO BAYOU SAUVAGE SHOWING IDEAL VEGETATION CONDITIONS. (FROM WALLACE, ET. AL., 1973)

food chain supported by an enormous lower level biomass. The strength of the system lies in its diversity. However, there are key processes, biotic types, food chains, and habitats that ultimately control its health. When these are impared or destroyed the entire system faces gross reduction of productivity or death.

Of basic importance to the ecosystem are the input of fresh river water and sediment through periodic floodings and marine tidal action. Salt laden river water is a prime source of the inorganic nutrients required by plants. Marine tidal action flushes detritus from the marsh into the estuary, and provides access for nursery crabs, shrimp and fish. The mixture of riverine and marine water establishes the salinity balance necessary for the production of marsh vegetation, the prime source of organic detritus.

The organic detritus cycle is the biotic base of the entire marsh. It starts with the photosynthetic conversion of inorganic nutrients into forms useable by higher forms of life. One portion of the cycle is essentially aquatic. Dissolved nutrients are photosynthesized into phytoplankton and algae, which are in turn fed upon by copepods, shrimp larvae, and oysters.

The most important portion of detritus cycle, however, is the production of marsh vegetation. Marsh plants contribute far more vegetative material than is normally consumed by the herbivores and are the single most important source of organic detritus. Both portions of this cycle are kept viable by riverine input and tidal action.

Marsh vegetation is eaten and returned to the system as respiratory loss and feces; at death it is decomposed and converted to other life forms. Bacteria convert the cellulose and carbohydrates to concentrated protein. Some detritus is consumed on the marsh, but much is flushed into adjacent water by tidal action. There detritus feeding organisms, including shrimp and oysters, crabs, and zoo-plankton, are able to make use of the partially decayed matter. The secondary consumers, such as minnows, plankton-feeders and predatory fish, are dependent upon the detritus-feeding organisms. The carnivors-alligators, mink, otter, raccoons-rely upon aquatic life and herbivores for their survival.

All tropic levels contribute to organic detritus and nutrient cycling through production of feces and excreta and eventual death. Thus a combination of physical factors such as tidal exchange, riverine input of nutrients, climate, and the recycling of materials by the biotic system serve to maintain the productivity and

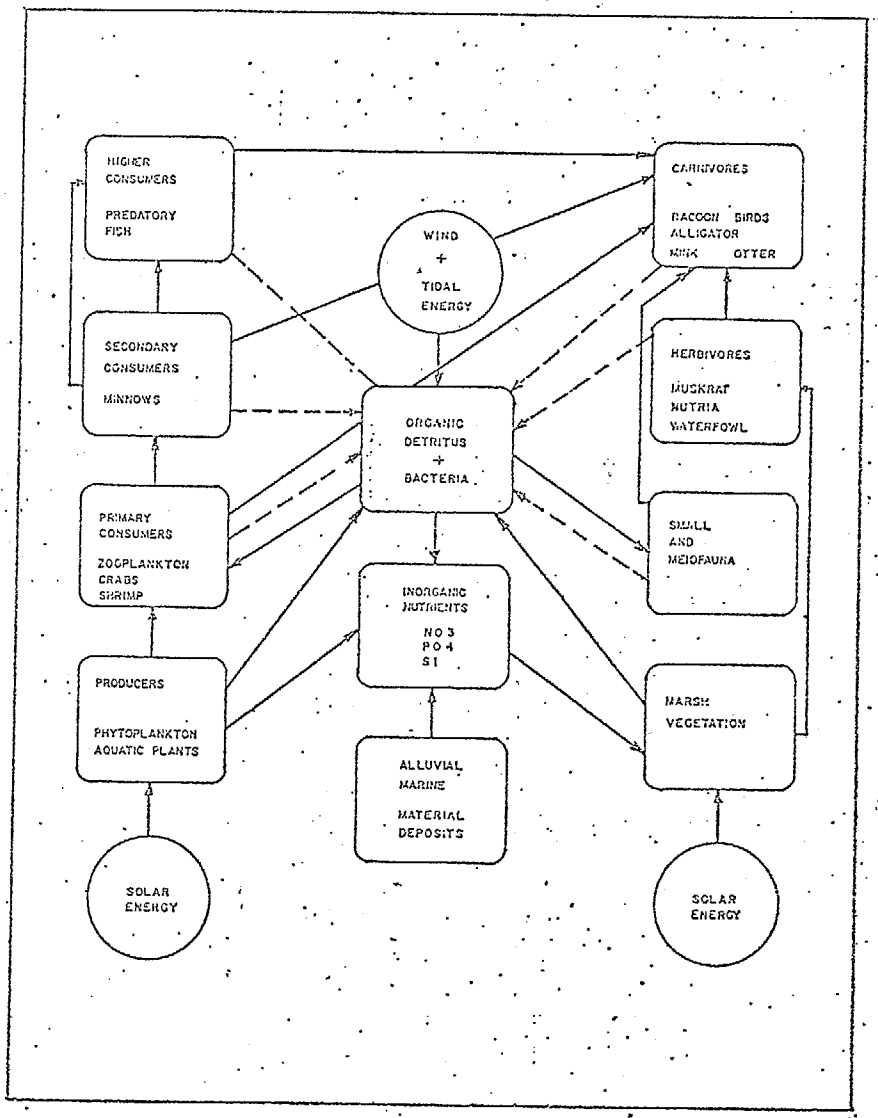
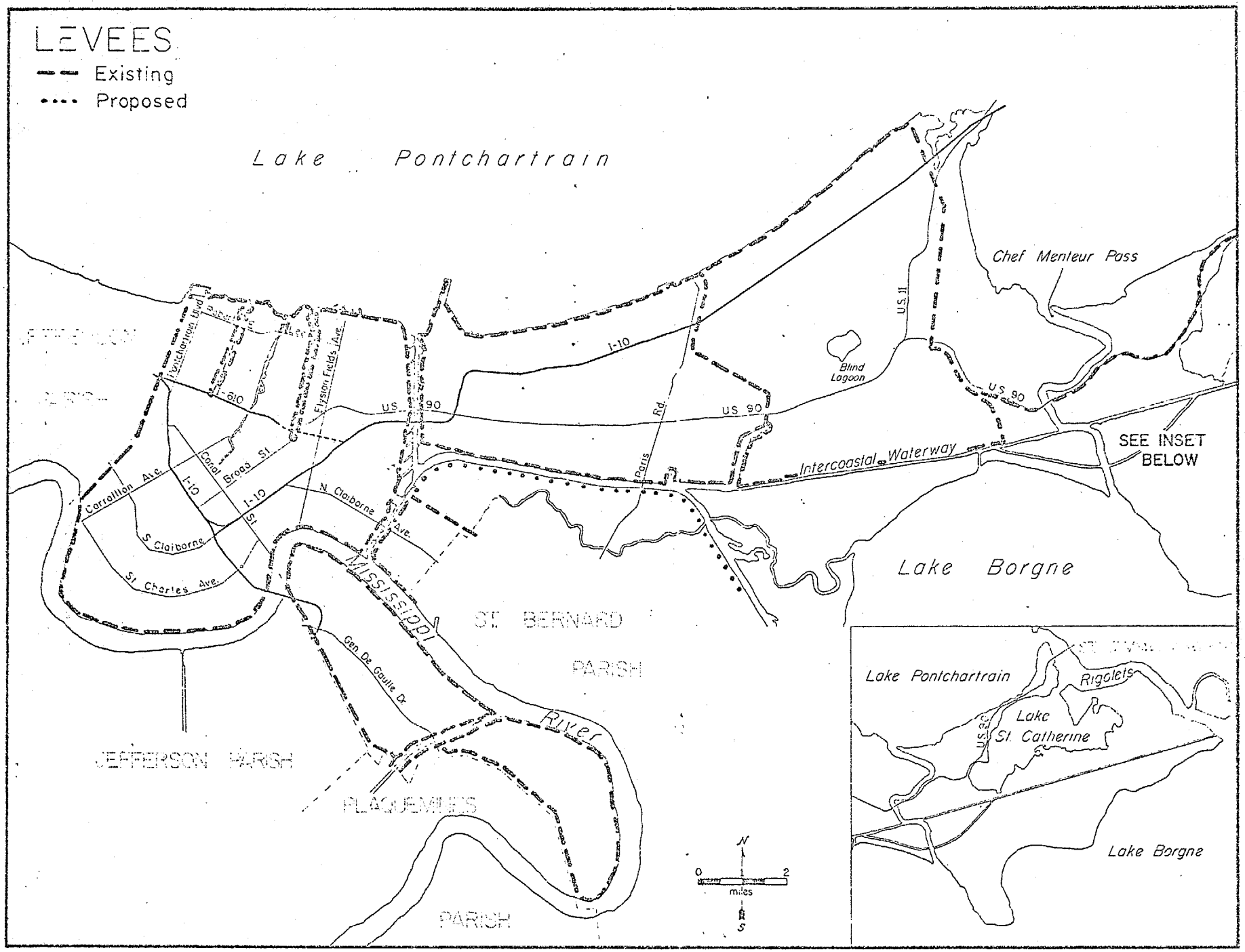


DIAGRAM OF MARSH ESTUARY FUNCTIONAL RELATIONSHIPS


LEVEES
Existing
Proposed
Lake Pontchartrain
Chef Menteur Pass
Blind Lagoon
I-10
US 90
US 11
Intercoastal Waterway
SEE INSET BELOW
Lake Borgne
Pontchartrain Blvd.
Elysian Fields Ave.
Carrollton Ave.
Canal Broad St.
N. Claiborne Ave.
S. Claiborne
St. Charles Ave.
Paris Rd.
MISSISSIPPI River
Gen. De Gaulle Dr.
ST. BERNARD PARISH
JEFFERSON PARISH
PLAQUEMINES PARISH
Lake Pontchartrain
Rigolets
Lake St. Catherine
Lake Borgne
0
2
miles
N
S

stability of the marsh-estuarine system. When tidal effects and river input are stopped, movement of both detritus and inorganic nutrients are greatly curtailed with a subsequent lowering of biomass and productivity.

Plant life occurs in an area because of the individual requirements of the species, its relative tolerance and adaptability, and the variation in environmental conditions. Zonation of marsh vegetation is primarily the result of the two interrelated factors of water salinity and topography. Modifications and sometimes total change (irreversible) have occurred in the Coastal Marsh Zone as a result of:

1. Canals - allow salt water into fresh water
2. Spoil banks - a by-product of canals, obstruct drainage and impound water
3. Petroleum exploration and production
4. Reclamation of wetlands
5. Burning
6. Alien biological agents introduced (i.e. nutria)

Much of the New Orleans area is a part of an old deltaic lobe from the Mississippi River and characterized by natural levees or "front lands" (Penfound and Hathaway, 1938). As part of the gradually sloping land behind the levee, the area once acted as an overflow catch basin. These backlands were characterized by cypress-gum swamps and/or marshes, depending upon the amount of salinity. These backlands were drained by sluggish, meandering bayous, and characterized by insignificant levees. Occasionally circular to elongated islands occur as former barrier beaches, and are oak vegetated.

There are major grass botantical indicators of the marsh zone along the Louisiana coast. These are grouped according to fresh, brackish and saline waters.

fresh water - Panicum hemitomon - paille fine, a major peat forming grass

brackish water - Spartina paten - cord grass

saline water - Spartina alternifolia - oyster grass

A brackish marsh usually occurs as an ecotone between saline and fresh water environments. It probably has the highest productivity as a result of the unique balance of productivity between saline and fresh conditions. In its simplest form this delicate balance occurs during storm tide when saline water adds suspended sediment to the marsh, replenishing nutrient supply. The process rejuvenates vegetation and fauna making it one of the most productive fishery and wildlife habitats in the nation (Palmisano, 1970).

The value of such an ecosystem is high for both men and animal:

1. It serves as habitat and wintering grounds for game birds - valuable to man as sport, education, and recreation.

2. It serves as a home and food for muskrat - sport, education, economic value to man.

3. It serves as breeding grounds for shrimp, fish, other organisms - economic and industrial value to man.

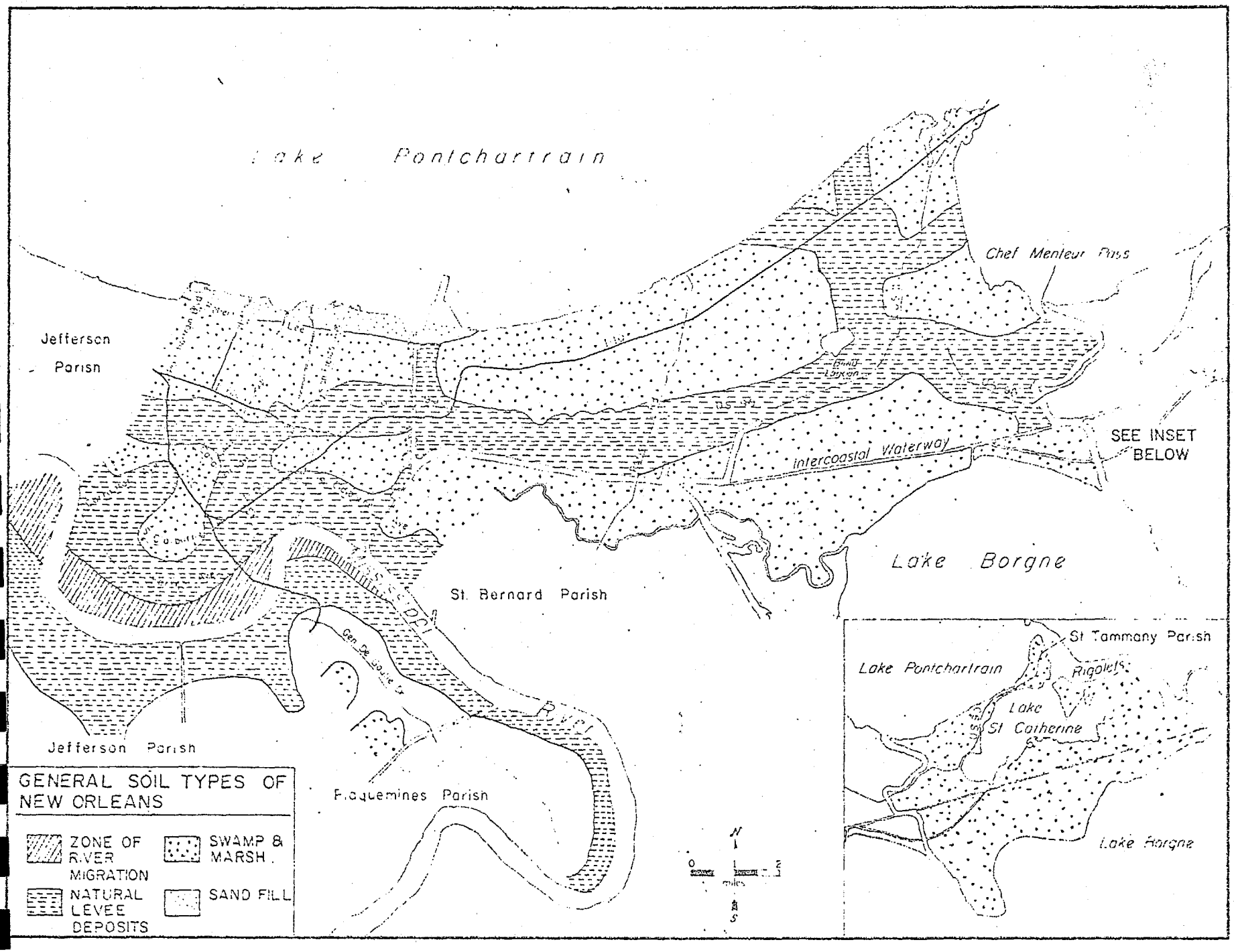
The only wildlife and natural fisheries habitats in New Orleans are located in the Eastern New Orleans wetlands and on the lower coast of Algiers.

Natural levees support a wide range of upland wildlife. Rabbits, mice and squirrels are particularly abundant. Formerly the levees also provided habitat for bear and mountain lions. The backswamps further provide habitat for a wide range of amphibians and aquatic life forms as well as nutria, muskrats and raccoons. Although the whole area supports numerous snakes, the natural levees and backswamps provide the most opportune habitat. The natural levees and backswamps also provide the only nesting sites for birds which nest above ground.

Impounded marshes provide habitat for a number of mammals; the most notable are raccoon, nutria, and muskrat. Trappers report occasional mink. The expanses of open freshwater provide excellent waterfowl habitat and the first freshwater encountered by migrating waterfowl upon crossing Lake Pontchartrain; where the marsh vegetation occurs, the available food is plentiful.

Numerous ducks are usually present as well as coot, American egrets, snipe, great blue heron, and green heron.

The Chef Menteur and Lake Borgne marshes sustain a varied fauna. Shellfish include the brackish marsh clam, the horse mussel and blue crabs among others. The commercial shrimp were noted in the open water bodies. Amphipods occur throughout these marshes.


Lake Pontchartrain
Chef Menteur Pass
Jefferson Parish
SEE INSET BELOW
Intercoastal Waterway
Lake Borgne
St. Bernard Parish
Jefferson Parish
Plaquemines Parish
GENERAL SOIL TYPES OF NEW ORLEANS
ZONE OF RIVER MIGRATION
SWAMP & MARSH
NATURAL LEVEE DEPOSITS
SAND FILL
St Tammany Parish
Lake Pontchartrain
Rigolets
Lake St Catherine
Lake Borgne

Discussions with local fishermen and comparisons with similar marshes indicate that the predominant fish spawning in the Chef Menteur and Lake Borgne marshes should include: Croaker, Spot, Menhaden, Mullet and Sea Catfish. Speckled Trout, Red Drum, Croaker, Spot and Menhaden are of commercial importance. Killifish are also abundant throughout the marshes. Almost all of the fresh water fish species will also occur in the brackish marshes due to the low salinity conditions.

The natural areas presently provide habitat for a great variety of water fowl. The areas of fresh water marsh, though small and scattered, are excellent potential food sources.

Impounded marshes in the area are generally operating at a reduced biotic level. Interchange with the Gulf has been cut off and the system is gradually changing to a freshwater one. Although marine fish occur occasionally, their access is limited to that provided by improperly functioning tide gates and drainage culverts. The blue crab which enters the impounded areas in a juvenile form is the only marine creature occurring almost throughout the area. Freshwater fish are abundant throughout the impounded areas.

Summary

The description of the current state of the New Orleans environment and the natural forces influencing environmental conditions provides the "jumping off" point from which a coastal zone management plan must operate.

The general description of the natural environment in the municipal boundaries of the City of New Orleans provides a rudimentary baseline from which decisions can be made as to whether the environment should be maintained in its present state, or whether it should be modified. The inventory of existing conditions also provides a general means for measuring environmental changes due to natural and man-made modifications.

The management of the environment must operate within the framework provided by nature. The complex inter-relationship between water regimens, tidal actions, biotic parameters, climatology and other factors must be well understood before a management plan can be implemented. Without a knowledge of these inter-relationships, there is no way to predict the outcome of the various management actions; as a result environmental degradation could be facilitated rather than abated.

Recognition of this fact causes one to realize that additional data must be compiled and correlated on the basis of small unit areas so that the implications of future actions can be fully understood.

3

Classifications Of Environmental Areas

The City of New Orleans can be broken down into four environmental areas based upon the predominant conditions of each area. Area I, the Highly Urbanized Area, includes the most heavily populated areas of the city and is bounded by the Orleans/Jefferson Parish boundary on the west, Lake Pontchartrain on the north, Paris Road on the east and the Gulf Intracoastal Waterway (Algiers) Canal on the south.

Area II, the Contained Marsh Area, is bounded by Paris Road on the west, Interstate Highway 10 on the north, the Gulf Intracoastal Waterway on the south, and U.S. Highway 11 on the east. This is an area of impounded fresh water marsh which is now being sporadically drained. The area is planned for the site of the 8,400 acre Pontchartrain New Town in town.

Area III, the Non-Urbanized/Levee Area, encompasses all of what is known as the Lower Coast of Algiers. This is an area which is sparcely populated. Much of the area is either forested or under agricultural use. The U.S. Coast Guard maintains a large reservation in this area, at the southern most end. The Lower Coast is considered to be the most desirable developable land and remaining in the city since it is totally above sea level and well forested. It has not developed to this point because of a lack of access and utilities.

Area IV, the Estuarine Marsh Area, includes a very large proportion of the City of New Orleans, and one which is currently experiencing the most severe development pressures. Since this is an area of most urgent environmental concern, this section will concentrate on the condition of the hydrologic units contained within this area.

Highly Urbanized Area:

The highly urbanized area contains the bulk of the city's residential population, along with virtually all of the city's commercial and industrial activity. Existing neighborhoods range in age from the early colonial period to newly developed areas. Contained within this area are the historic Vieux Carre', Treme, Garden District and Lower Garden District Neighborhoods which were developed between 1728 and 1860's. Also within the area is the Central Business District (CBD), industrial corridors and modern residential areas.

While the natural environmental characteristics which once existed in what is now the highly urbanized area has long been destroyed, this does not preclude the reintroduction of those elements which may be compatible to urban living. Waterways which have been filled could be reopened and utilized as aesthetic, recreational, and perhaps, transportation resources. Indigenous plant species could be reinstated along canal and bayou banks, along streets and in open areas.

Contained Marsh Area *

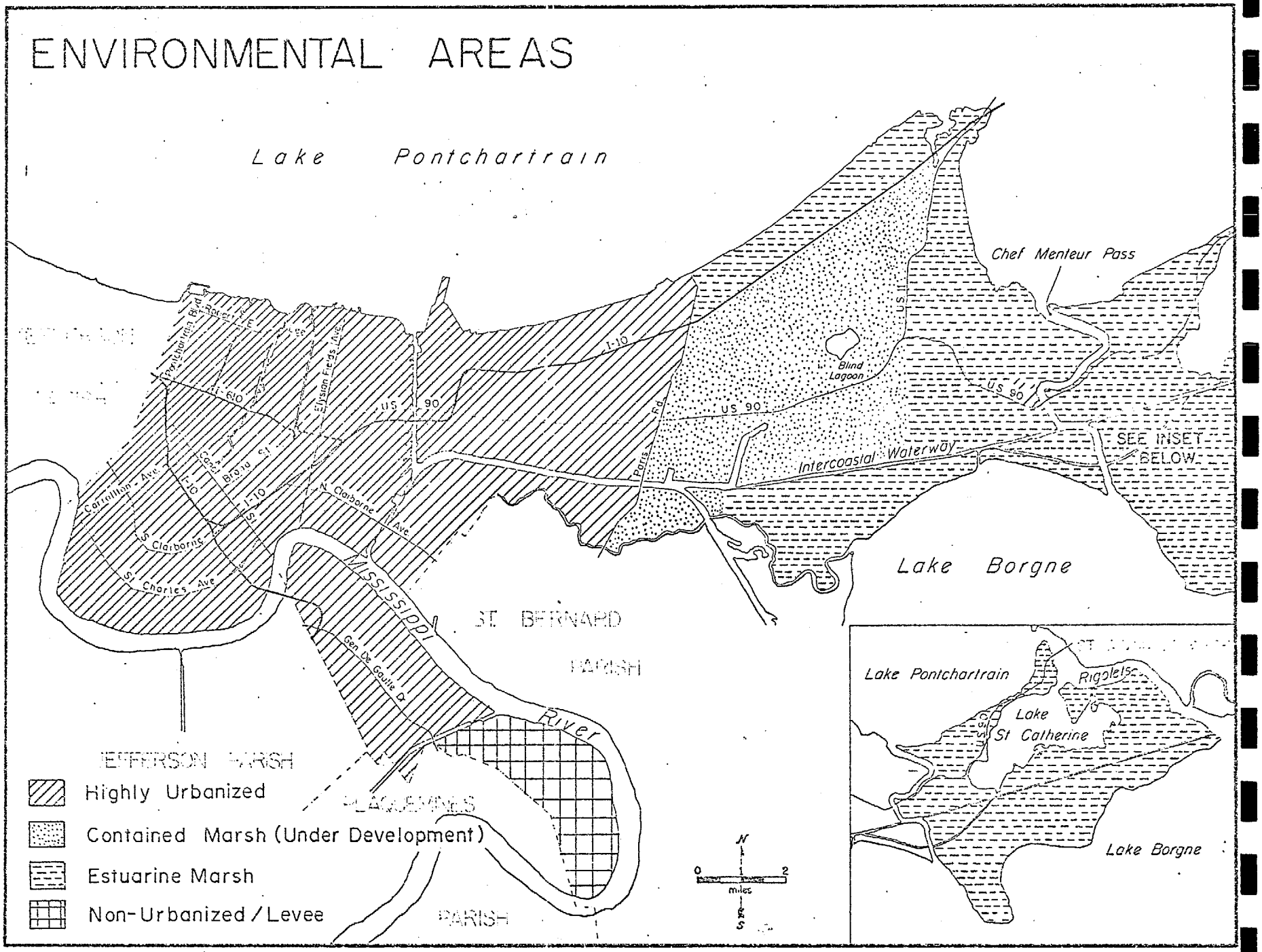
This area is one of rapid growth. Several residential subdivisions have been constructed in the area with the past decade, and there are plans to construct Pontchartrain New Town in town on the site.

Pontchartrain is a planned new community within the corporate limits of New Orleans and is proposed 20 miles from downtown in New Orleans East. As conceived, the purpose of Pontchartrain is to contribute a better environment; to provide improved living conditions; to add to the supply of housing, including housing for low and moderate income groups; to promote sound economic growth and employment opportunities; and generally, to provide a viable alternative to disorderly urban growth.

Pontchartrain is planned to house some 110,000 residents in approximately 36,000 dwelling units by the year 2000. Of the total 8,400 acres, 2,691 acres are allocated for residential development, 2,913 for open space, 650 for industrial uses, 229 for community facilities, 332 for commercial and office use, and the remaining 1,589 acres for roadways and circulation.

Pontchartrain proposes to provide a wide range of housing, employment, education, health, and leisure time choices and opportunities for all age, income, racial and ethnic groups, and life-styles. More specifically, there will be provided a variety to housing type options for all income levels, a high quality education system for all age groups, adequate employment and job training opportunities for all residents; business development opportunities; a variety of recreation areas and activities; comprehensive, readily accessible health care; adequate transportation within the new community and connecting with other areas of the metropolitan area; public and private facilities which avoid unnecessary duplication through a shared facility approach; a high level of service with the equal access available for all residents; opportunities for the effective use of new technologies in various fields such as transportation, communication, construction and waste disposal; citizen participation in the development process and commitment to social as well as market and financial planning in the development process.

* This, and much of the remaining portions of section V, was taken from Wallace, et. al., (1973a, 1973 b).


ENVIRONMENTAL AREAS
Lake Pontchartrain
Chef Menteur Pass
Blind Lagoon
US 90
I-10
Intercoastal Waterway
SEE INSET BELOW
Lake Borgne
Elysian Fields Ave
Claiborne Ave
Carrollton Ave
Broad St
Clarborne
Charles Ave
MISSISSIPPI
River
ST BERNARD
PARISH
JEFFERSON PARISH
PLAQUEMINES
PARISH
Gen De Gaulle Dr
Paris Rd
Highly Urbanized
Contained Marsh (Under Development)
Estuarine Marsh
Non-Urbanized / Levee
N
0
1
2
miles
Lake Pontchartrain
Rigolets
Lake St Catherine
Lake Borgne

Pontchartrain will be developed over a multi-year period and will be financed with the aid of federal funds available under Section 713 of the Urban Growth and New Community Development Act of 1970.

Non-Urbanized/Levee:

The boundaries of the Lower Coast of Algiers are coterminous with this area's boundaries. The area is one of high ground which is heavily forested. The principal land use in the area is agricultural. Being, topographically, the most desirable area for residential development, the City of New Orleans has plans for the development of a New Town in the area. Development in the area however is dependent upon adequate transportation routes to link the Lower Coast with other areas of the city. Recent announcements indicate a possible future bridge and expressway will go through the lower area of Algiers. This could serve as impetus to development of the area.

Future plans for the Lower Coast of Algiers, an area containing approximately 4700 acres, envision not only the creation of a new town but also the proposed 1000 plus acre English Turn Wilderness Park. The "virgin" nature of the Lower Coast offers an opportunity to develop a community having as its primary objective the protection and enhancement of the existing environmental structure.

The Lower Coast plan proposes eight major residential communities, a town core area, and an industrial and office park. These are tied together by a transportation and open space network. The anticipated 52,000 population will be given a wide range of housing choice, education, employment and recreational opportunity.

Estuarine Marsh Area:

This area, because it is most susceptible to developmental pressures and because it is mostly a viable part of the Maurepas-Pontchartrain-Borgne estuary complex, is subdivided into hydrologic units. This is done to provide sufficient detail so as to facilitate the formulation of a management plan giving emphasis to this area.

The area is divided into five environmental units, each comprised of fairly homogeneous conditions with respect to drainage and plant and animal life. These units were derived by the Coastal Resource Unit of the Center for Wetland Resources, Louisiana State University - Each unit is summarized below, with the exception of an Archaeological Site Unit which is not considered a biologically distinct unit.

The units, grouped according to their hydrologic conditions, fall into five categories: open marsh, impounded marsh, drained marsh, natural levee, and spoil banks, roadways, and other elevated areas and/or developed sections within a unit are not discussed separately.

Open Marshes

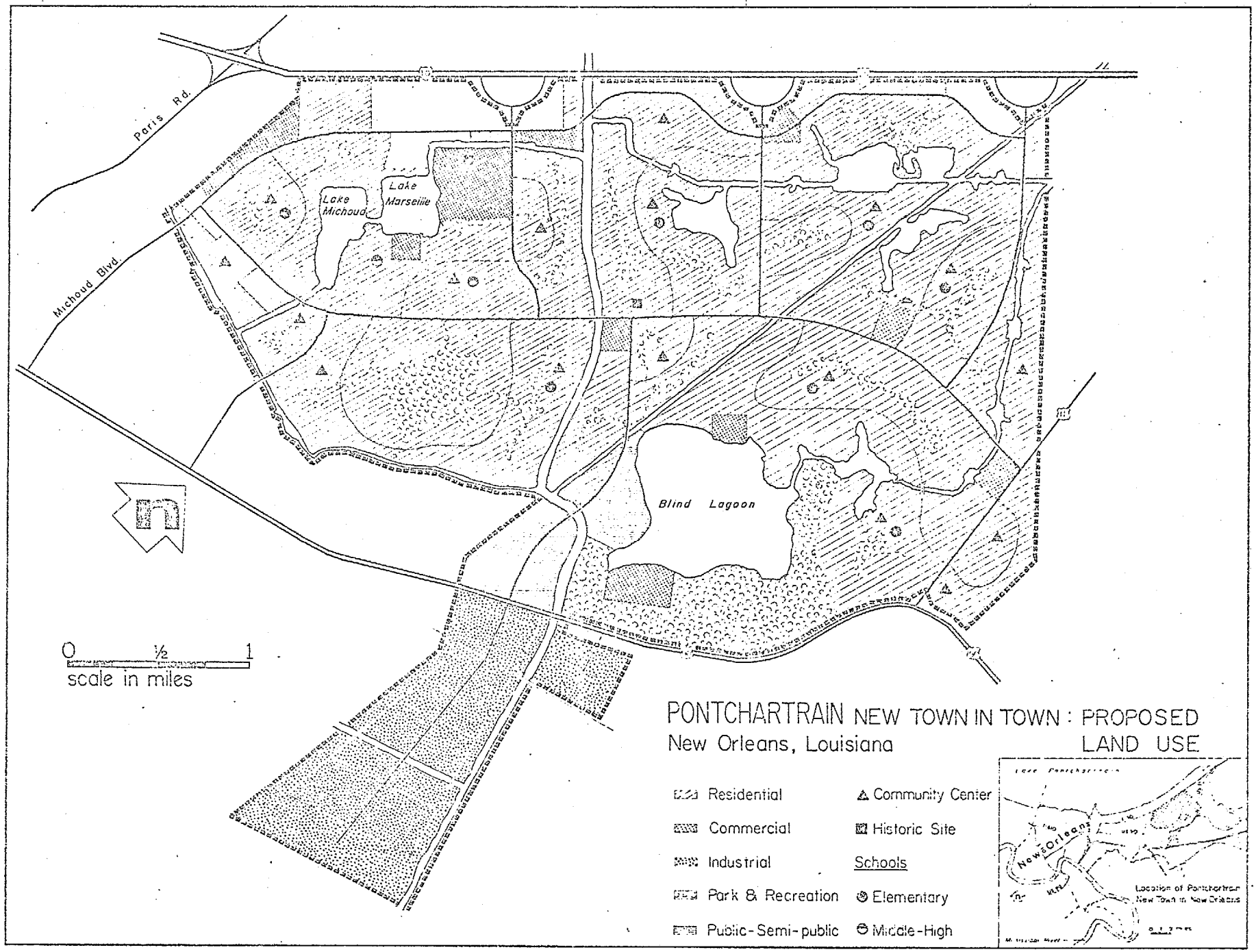
In the area some 20,000 acres are enclosed by dikes, levees and embankments. The remainder of the area is occupied by open marsh in unhindered communication with the estuarine system through tidal exchange. Open marsh areas are: The Irish Bayou-Chef Menteur Marsh Unit, the Lake Borgne Marsh Unit, the Venetian Isles Marsh Unit. These brackish tidal marshes support similar vegetation and animal communities.

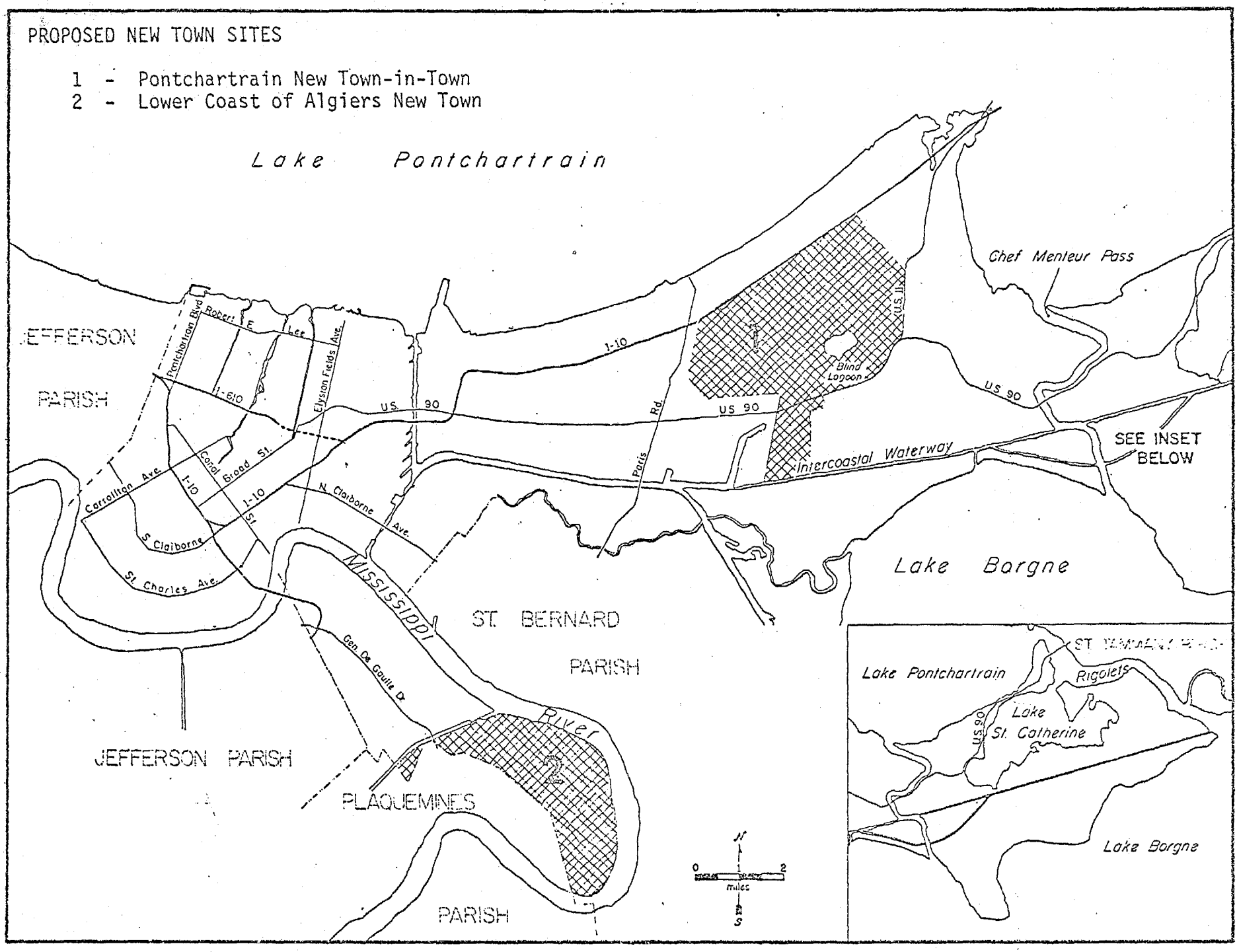
The Irish Bayou-Chef Menteur Marsh Unit is the tract of land east of the levee along U. S. Highway 11 and extending from the railroad north of the Irish Bayou south to Chef Menteur Pass. It is an open brackish marsh in excellent condition representing the most productive and healthy estuarine nursery area east of Chef Menteur Pass.

The area shows some evidence of ponding and minor degradation of the marsh mat from changes in the water balance resulting from the construction of the flood protection levee which forms its western boundary. The marsh has adjusted to these changes in water flow and appeared to be in a stable condition. Maintenance of existing freshwater supplies to the marsh coupled with adequate protection measures could ensure the continued high productivity of this brackish marsh and its role in the estuarine system.

The Lake Borgne Unit fringes the Contained Marsh Under Development Area on the south, comprising a small wedge of a much larger unit extending beyond the area. The marsh in the Lake Borgne Unit is still open to tidal exchange and supports more diverse vegetation than the Chef Menteur marsh. At the eastern end of this unit some spoil has been deposited in conjunction with the flood surge control channel to the Intracoastal Waterway west of the Chef Menteur Pass.

Some deterioration of this marsh is evident in the ponding


Paris Rd.
Michoud Blvd.
Lake Michoud
Lake Marseille
Blind Lagoon
0 ½ 1
scale in miles
PONTCHARTRAIN NEW TOWN IN TOWN : PROPOSED LAND USE
New Orleans, Louisiana
Residential
Commercial
Industrial
Park & Recreation
Public-Semi-public
Community Center
Historic Site
Schools
Elementary
Middle-High
New Orleans
Location of Pontchartrain New Town in New Orleans


PROPOSED NEW TOWN SITES
1 - Pontchartrain New Town-in-Town
2 - Lower Coast of Algiers New Town
Lake Pontchartrain
JEFFERSON PARISH
Pontchartrain Blvd
Robert E. Lee
Elysian Fields Ave.
I-610
I-10
US 90
Paris Rd.
Blind Lagoon
U.S. 11
Chef Menteur Pass
US 90
SEE INSET BELOW
Intercoastal Waterway
Carrollton Ave.
Canal Broad St.
I-10
I-10
N. Claiborne Ave.
S. Claiborne
St. Charles Ave.
MISSISSIPPI
ST. BERNARD PARISH
Lake Borgne
Gen. De Gaulle Dr.
River
JEFFERSON PARISH
PLAQUEMINES
PARISH
0
2
miles
Lake Pontchartrain
Rigolets
Lake St. Catherine
US 90
Lake Borgne

conditions and loss from lake front erosion during the past three decades. Nonetheless, the marsh is in good health and provides a viable fisheries nursery area and waterfowl habitat. Maintenance of the marsh with adequate freshwater in conjunction with an overall protection plan for the Lake Borgne marshes could maintain this unit as a highly productive area in the estuarine system.

The Venetian Isles Marsh Unit contains both developed and undeveloped areas. The undeveloped areas of the unit are primarily open marsh. Immediately south of Venetian Isles recent mosquito ditching is draining that section of the marsh.

The section of this unit west of Venetian Isles north of the U. S. Highway 90 and south of the Bayou Sauvage has also been altered by mosquito control efforts. A marsh buggy has been used to effect ponding in the center of this area. Where undisturbed, this area supports a rather diverse brackish marsh vegetation.

In general, all of the open brackish marshes on the site are biologically rich, providing an especially productive, nursery area.

The Chef Menteur/Rigolets Unit is characterized as a healthy salt to brackish marsh, interlaced by bayous, ponds, and a major lake, Lake St. Catherine. The area is cut by U. S. Highway 90 and by a railroad embankment, but nevertheless has adjusted to these unnatural conditions.

Vegetated spoil banks run through the unit. These spoils were deposited in the excavation of the Gulf Intracoastal Waterway. Plant life within the entire unit is typical of that previously described for like conditions in other units.

Along the shoreline of Lake Pontchartrain, which borders the unit on the north, and Lake Borgne, which borders the unit on the south, rapid erosion is taking place. This is due in part to the Gulf Intracoastal Waterway, and channelization which have disrupted patterns of water flow and deposition.

Impounded Marsh - A variety of conditions prevail over the marsh portions of the area enclosed by levees and spoil banks. Poor drainage, unstable water conditions, and, in some large areas, flooding account for the diverse conditions in this marsh. This area is the Lakefront Marsh Unit.

The Lakefront Unit is located along Lake Pontchartrain between the Southern Railroad embankment and Interstate 10.

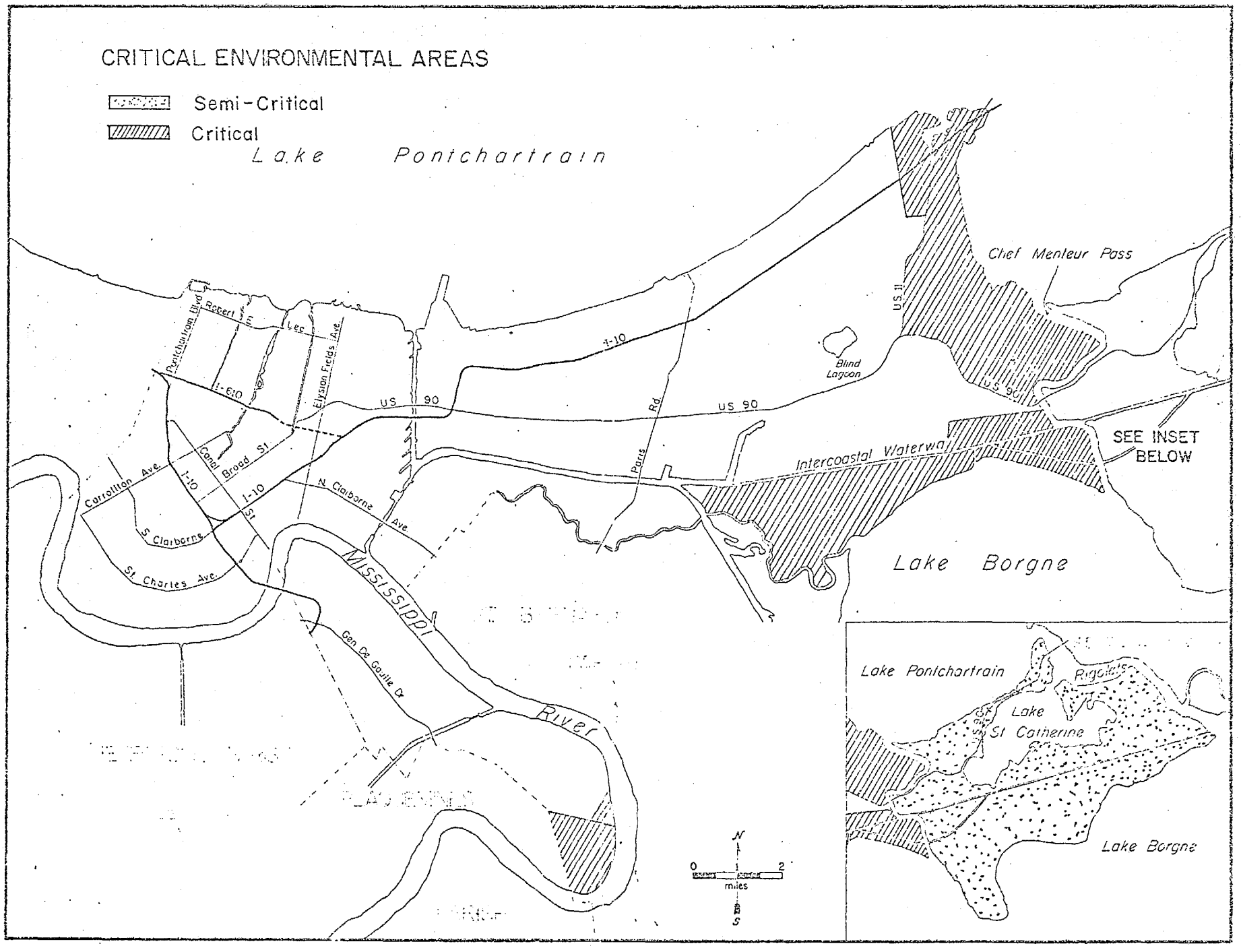
The unit has been closed to water exchange with Lake Pontchartrain since the construction of the Southern Railway embankment 50 years ago. A tide gate for drainage is located at the eastern end of the unit. Despite this, the marsh is in excellent condition and persists as a brackish marsh. The clumping growth-form of its grasses is probably indicative of lowered salinity conditions and absence of tidal exchange. The abundance of species, such as the blue crab, is evidence of leakage of juvenile and larval forms of marine species through the tide gate. The uniformity of the condition of this marsh as well as the maintenance of the brackish marsh vegetation suggests that saltwater is entering the unit beneath the embankment of the Southern Railway.

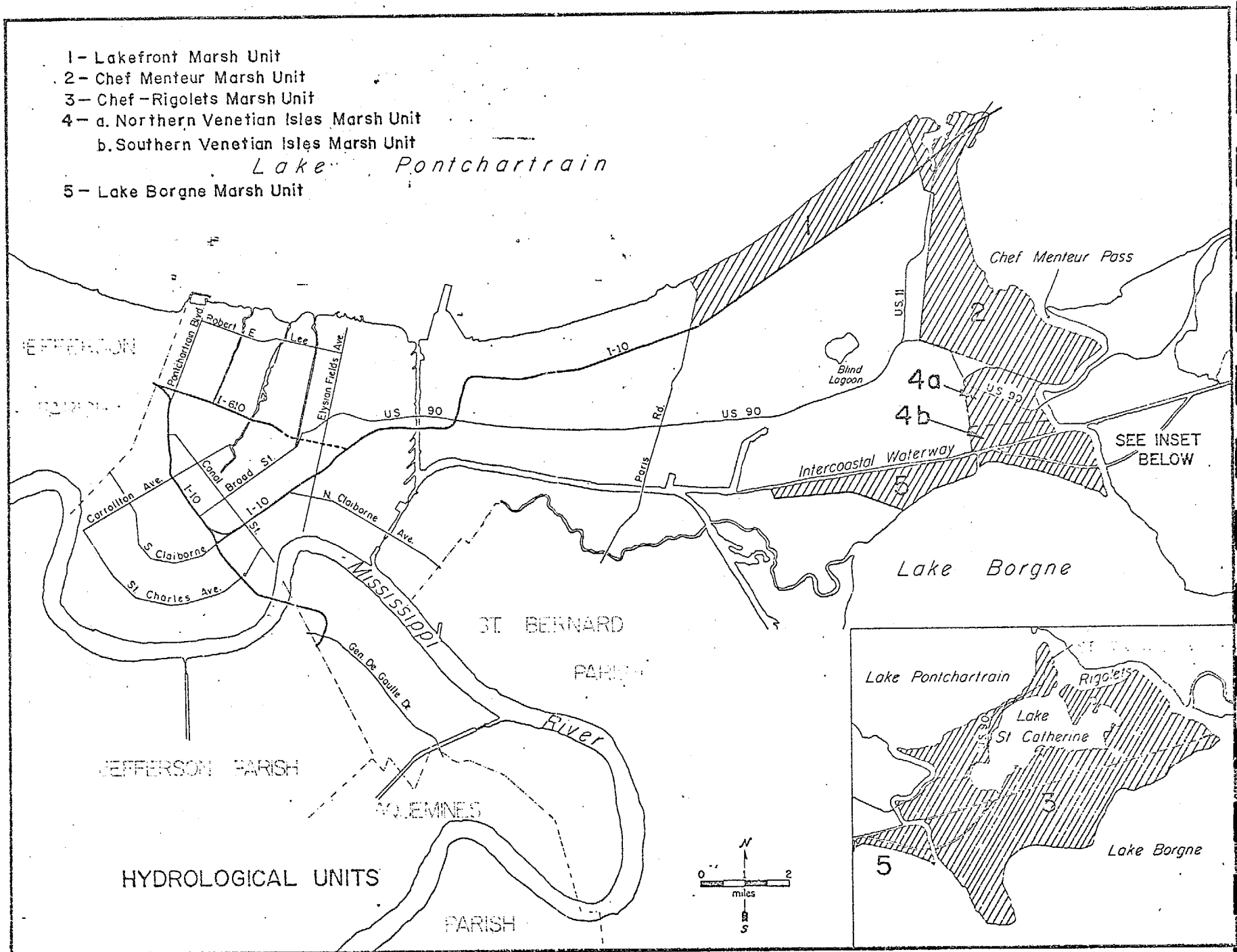
Critical Areas :

Because of current pressures for the development of wetlands areas, it is imperative that those viable wetlands which are most likely to be developed if unmanaged in the near future be identified. The designation of these areas and the formulation of a program to check uncontrolled urbanization therein may involve the introduction and adoption of measures whose primary purpose is wetlands preservation. While the necessity of instituting a like program for the remaining wetlands is recognized, the urgency of instituting preservation measures for the critical areas should be given first priority.

Critical areas are those viable marsh and forest areas which should be preserved because of their value as recreational and economic resources. Typically, critical areas lie in the path of development in the near future, but at the same time, are areas which provide a substantial habitat for fish, waterfowl, and other species of wildlife which contribute to the region's resources in terms of seafood production and recreational pursuit; therefore, development in these areas should be prohibited.

These areas on the East Bank of the Mississippi River border the Pontchartrain New Town in town site on the east and south. These areas have been described previously as the Irish Bayou-Chef Menteur Unit, the Southern Venetian Isles Marsh Unit, and the Lake Borgne Marsh Unit. There is one area on the West Bank of the Mississippi River which should be considered critical. This area, on the Lower Coast of Algiers is currently the site of a U. S. Coast Guard radio station, is virtually in a


CRITICAL ENVIRONMENTAL AREAS
Semi-Critical
Critical
Lake Pontchartrain
Chef Menteur Pass
Blind Lagoon
US 11
US 90
I-10
Robert E. Lee
Pontchartrain Blvd.
Elysian Fields Ave.
Canal Blvd.
Carrollton Ave.
N. Claiborne Ave.
S. Claiborne
St. Charles Ave.
Broad St.
Paris Rd.
Intercoastal Waterway
SEE INSET BELOW
Lake Borgne
MISSISSIPPI
River
Gen De Gaulle Dr.
N
S
0
2
miles
Lake Pontchartrain
Rigolets
Lake
St Catherine
Lake Borgne


1 - Lakefront Marsh Unit
2 - Chef Menteur Marsh Unit
3 - Chef - Rigolets Marsh Unit
4 - a. Northern Venetian Isles Marsh Unit
b. Southern Venetian Isles Marsh Unit
5 - Lake Borgne Marsh Unit
Lake Pontchartrain
Chef Menteur Pass
Blind Logoon
Intercoastal Waterway
SEE INSET BELOW
Lake Borgne
MISSISSIPPI River
ST. BERNARD PARISH
JEFFERSON PARISH
PLAQUEMINES PARISH
Pontchartrain Blvd
Robert E. Lee
Elysian Fields Ave.
I-610
I-10
US 90
US 11
Paris Rd.
Carrollton Ave.
Canal Broad St.
N. Claiborne Ave.
S. Claiborne
St. Charles Ave.
Gen De Gaulle Dr.
HYDROLOGICAL UNITS
0 2
miles
N
S
Lake Pontchartrain
Rigolets
Lake St Catherine
Lake Borgne
4a
4b
2
3
5

wilderness state, and harbors several species of fowl and wildlife. These areas, in their entirety are, in this report defined Critical Environmental Areas.

The Lake Borgne Unit represents a unique case. Being along an area of the Gulf Intracoastal Waterway, which is slated for future industrial use, this area requires an adequate buffer zone in order to minimize potential adverse impacts emanating from this future industrial area. Therefore, the entire area south of the Gulf Intracoastal Waterway, East of the Westbank of the Michoud Canal, and north of Bayou Bienvenue is here defined as being included with the Lake Borgne Marsh Unit as a critical environmental area.

The critical areas described in this section are, with the exception of the Algiers parcel, outside of the city's hurricane protection system. This, in part, accounts for their viability and undeveloped state. The importance of these areas should not be under estimated. These estuarines support a large variety of flora and fauna, represent potential water oriented recreational sites, are ideal for the development of research facilities and contain significant archaeological sites.

In addition to the critical areas, there is a semi-critical area, or area of secondary importance. The semi-critical area constitutes the Chef-Rigolets Marsh Unit. The sub-unit to the west of and along U.S. Highway 90 has been developed largely as a fishing camp development with marinas, restaurants, and limited commercial development. The remaining portions of this sub-unit however, are still open to tidal flows and are viable estuary areas. Development in this sub-unit should be limited to the type that already exists and be closely monitored so as not to allow further marsh deterioration.

The sub-unit to the East of U.S. Highway 90 is largely virgin marsh. Except for a railroad embankment, and navigation channels, this area is yet to directly be impacted by the works of man. Because this area is inaccessible except by boat, development pressures should not be placed on the area in the near future. However, because of the importance of this marsh as a fisheries and wildlife habitat, controls should be placed on the area and studies carried out to develop mechanisms for the marsh's maintenance.

4

Summary Of Urban Growth

In order to understand more fully the urgency of exercising control through a combination of property and development rights acquisition and the use of police powers over critical and semi-critical areas, a general account of recent urbanization patterns is helpful.

The urbanization of the City of New Orleans may be examined and described in three incremental growth periods based upon the citywide land use inventories of 1927 and 1949 as updated in 1953 and 1965.

Prior to 1929 the development in New Orleans was very compact by present standards and was generally confined to the area bounded by Florida Avenue, the Orleans/Jefferson Parish Boundary Line, the Industrial Canal, the Mississippi River, and on the west bank of the river, by Behrman Avenue.

In the period 1928 to 1953 development in the city spread to the north, south and east as required by growing population pressures and permitted by the replacement of fixed trolley lines in favor of motor bus routes and the increasing utilization and popularity of the automobile. Drainage requirements continued to form one of the greatest obstacles to new areas of growth, as it does today. By 1953, practically the entire area north of Florida Avenue, between the Industrial Canal and the Orleans/Jefferson Parish Line was developing rapidly, as was the area south of Florida Avenue to the east of the Industrial Canal. The development of the west bank continued at a slow pace, inhibited by the lack of adequate access. Also, some development had occurred north of Florida Avenue to the east of the Industrial Canal along Chef Menteur Highway and Hayne Boulevard.

The development period of 1954 to 1965 resulted in the urbanization of practically the entire area bounded by Lake Pontchartrain, the Orleans/Jefferson Parish Line, the Mississippi River, the Industrial Canal north of Florida Avenue and the Orleans/St. Bernard Parish Line south of Florida Avenue. The construction of the Greater New Orleans Mississippi River Bridge in the mid 1950's strongly accelerated development on the west bank. Similarly, improved access to the area east of the Industrial Canal resulted in an increased rate of development in that area, especially in the form of residential subdivisions extending between Chef Menteur Highway and the Dwyer Canal.

The following figure shows the generalized land use pattern of New Orleans resulting from a grouping of twelve land use classifications into four principal categories, namely, residential, commercial, industrial and public and semi-public.

The Central Business District of New Orleans is illustrated as a dominating hub of concentrated commercial activity. This map depicts the extension of the central business area into parts of the Vieux Carre' and outward along Canal Street, St. Charles Avenue and North Rampart Streets. Public building complexes in the central area, such as the Civic Center and the nearby Charity Hospital Medical Center and Union Passenger Terminal, the Municipal Auditorium and the International Center are depicted as impressive landmarks giving added orientation and definition to the commercial core.

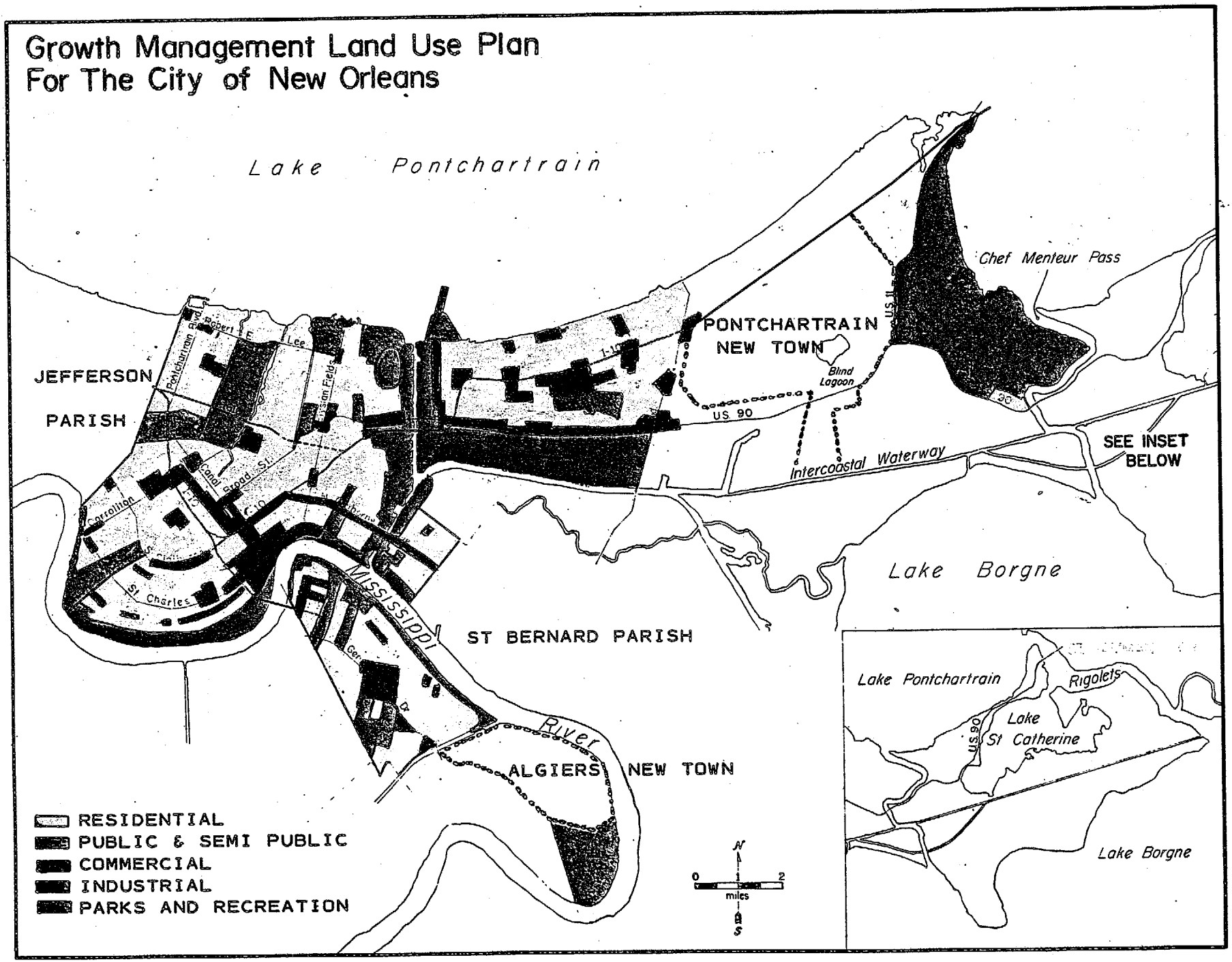
The general lack of commercial areas in the form of community or regional-type shopping centers is adequately illustrated. Few commercial centers, excluding the CBD of course, meet the criteria of a shopping center. The extensive number and array of "corner-type" commercial uses, such as bars, groceries, laundries, and the like, situated throughout the older parts of the city, together with the rather extensive strip commercial uses along such roadways as St. Claude Avenue, Claiborne Avenue, Broad Street and Magazine Street, has tended to keep centralized shopping center commercial developments to a minimum.

Existing industrial areas are shown in five major locations: along the Mississippi River; along each side of Pontchartrain Expressway; along the St. Louis Street railroad frontages; along the Industrial Canal; and the emerging industrial complex east of the Industrial Canal between the L & N railroad tracks and the Intracoastal Waterway.

Public and semi-public uses have made a distinct impact upon the city's land use pattern. The 1500 acre City Park, for example, is one of the most impressive features. Other significant public uses include Lake Pontchartrain and its open space frontages, Audubon Park, Pontchartrain Park, the New Orleans Airport, the Naval Station in Algiers, and the campuses of U.N.O., S.U.N.O., Tulane, Loyola, and Dillard Universities.

As can be seen, the City of New Orleans is experiencing a rapid rate of physical expansion. The areas experiencing developmental pressures however are mostly marsh areas outside of the hurricane protection system, and without sewer and utility service. The only high ground suitable for development is found on the Lower Coast of Algiers; transportation routes providing this area with ingress and egress however are severely deficient

Growth Management Land Use Plan For The City of New Orleans



and, therefore, the strongest developmental pressures are being felt in eastern New Orleans. While soil conditions in eastern New Orleans are considered not to be favorable for development, the relative accessibility of the area makes it an attractive one to developers.

In addition to development pressures placed upon the wetlands, the presence of oil and natural gas underlying these marshes has placed additional environmental stresses upon the area. Several wells, platforms, and pipelines are currently in the area. Additional exploration activity can be expected to take place as the current fuel shortage grows worse. Eastern New Orleans therefore, because of its wetlands nature and the pressures bearing upon the area, deserves primary attention in the development of a coastal zone management plan for the city's wetlands areas.

The effective management of the New Orleans environment, while coming under the general jurisdiction of city government, must, by law, recognize the involvement of federal and state agencies and that of various departments of local government.

Economic Conditions

New Orleans is a part of the coastal region and is ensconced amid rivers, bayous and lakes. Historically these water resources have been, and remain a mainstay of the economy and lifestyle of the city. From the time the area was formed man has lived in the coastal zone and directly supported himself from it. The diet of ancient Indians for example, consisted largely of clams (Rangia cuneata)found in abundance in the brackish waters of Lake Pontchartrain and Borgne. Later Indians traded the pelts of marsh animals found in the coastal zone.

One of the primary determinants for establishing New Orleans on the banks of the river near Lake Pontchartrain was the fact that this area was a natural portage heavily used by the Indians in their trade. Here, too, was a plentiful supply of marsh animals for food and furs.

Trapping became one of the first "industries" in the New Orleans area. At one time trapping was a significant occupation. However, the alteration of the marsh habitat and encroaching population sprawl has accelerated the demise of trapping as an important industry.

The Mississippi River provides the City of New Orleans with its drinking water supply and supports largest industry, the port. This port is the second largest in the United States and third largest in the world in value of foreign commerce and total water bore commerce handled. This importance can be realized in that it has been estimated that 20% of the local employment force is considered "port dependent".

Additionally, the river, coastal bayous and related waterways such as the Gulf Intracoastal Waterway provides the port and the nation with a cheap and convenient means of transportation and communication.

Another important factor in considering the economic value of the coastal zone, but one which is difficult to document monetarily, is the attractiveness of the coastal zone as a place to live. Greater New Orleans is the largest populated area of the state with a total of 1,092,000 persons. According to Louisiana Wetlands Prospectus prepared by the Louisiana Advisory Commission on Coastal & Marine Resources (1973), 24% of the projected state population increase will be in the coastal zone with a significant percentage being located in the New Orleans area.

The Coastal Zone is also attractive as a place to visit. According to the New Orleans and Louisiana Tourist Commission, 4.4 million visitors come to the area every year. In 1973-74 visitors spent $326.6 million dollars making tourism a leading industry of the area. The flow of tourists provides a year round employment base which dramatically increases during Mardi Gras.

Likewise, surrounding bayous and swamps are increasingly attracting the interest of tourists which has resulted in an increase in the tour boating industry. However, there remains a lack of recreational facilities in these areas.

Paralleling and equally important to the water transportation aspect of water resources is the seafood industry. Attempts were made to collect sufficient data to establish a direct correlation between the myriad of New Orleans restaurants and their link with the multi-million dollar tourism industry. Such a relationship has not been possible to document within the scope of this report for a variety of reasons, however, many indices point to a probable correlation which should be documented.

A random survey of restaurants show that many of the most popular have a menu composed of approximately 75% seafood. The quantity and regional origin of the food is difficult to determine because these restaurants buy through processors as well

as directly from the fisherman.

Seafood (crabs, shrimp, fish, oysters) is a basic product of the New Orleans coastal region. However, due to marketing practices it is one of the most difficult industries for which to establish statistics. Those referred to are preliminary figures compiled by the National Marine Fisheries Association in 1973 for Louisiana.

The Association points out that while the documented seafood landings (total fisheries caught including crabs, shrimp, menhadden, oysters, etc.) are not within the confines of Orleans Parish, the life cycle of the sea animals depends upon the interrelationship of the waters within and surrounding Orleans Parish. Tarver (1972) refers to Lake Pontchartrain as the largest contiguous estuarine area in the coastal zone of Louisiana.

At a recent federal hearing on proposed development projects, Dr. John Day (1974), testified that the Catherine-Borgne estuary accounts for 25 per cent of Louisiana's total annual fisheries catch of 1.2 billion pounds. He further stated, "more than one half of the food the fish and shellfish live on is derived from organic material released by wetlands fringing the lake".

This estuarine area (the waters of Lakes Pontchartrain, Borgne and Maurepas, and Breton Sound) yielded a catch of 20,500,953 pounds valued at $4,984,834. In September, 1973 alone the catch from Lake Borgne was valued at $420,000, half of which was oysters.

Gosselink, Odum, and Pope (1973) in a study of marshes estimated that seafood processing increases the dockside value of fisheries by 75%. This would place the aggregate value of the 1973 Maurepas-Pontchartrain-Borgne catch at $37,386,255.

One of the benefits of living in the coastal zone is the availability of water and marsh areas for recreation. Recreation is a great economic factor in the New Orleans coastal region, but like the relationship between tourism and seafood, it is difficult to document. There are approximately 17 boat dealers within the city and 54 within the area.

1973 motorboat registrations indicate that 32,328 motorboats of over 10 horsepower are in the area. The area's two major marinas can accommodate approximately 1000 boats. There are an equal number on their waiting list (including sailboats).

Utilizing the results of a cursory survey it has been conservatively estimated that an average weekend fisherman spends approximately $10 a day for bait, supplies, food and gas. Hypothetically, three people per boat fishing three times a year would have an estimated bare expenditure of $90, excluding the cost of boat rental which could range from a skiff to a 65' yacht. Also excluded is initial equipment purchase which could range from a cane pole to a sophisticated assortment of rods and reels.

If half (15,000) of the registered motorboats fish in the surrounding waters three times a year with 3 persons aboard the expenditure is $1,350,000. Interviews with persons involved in the service and supply business indicate that this estimate may be conservative. One outlet for gas and supplies contacted has an average spring/summer business of 400 boats per Sunday.

In Louisiana Wetlands Prospectus, a report by the Louisiana Advisory Commission on Coastal and Marine Resources, it is estimated that coastal recreation, considered as an industry, ranks third to the mineral and agricultural industries. The report continues, "other economic values of coastal zone recreation are not always recognized. Those include money brought into localities by non-residents attracted by the recreational opportunities, increased attractiveness of the coastal zone for certain types of labor, intensive business because the coastal zone is a desirable place to live, and business opportunities through direct service to recreationists, e.g. sales of paraphernalia of outdoor recreating, boating, etc". (p. 267).

The economic value of the New Orleans Coastal Zone must be assessed from a variety of viewpoints and bases: those that are directly and indirectly related to the coastal zone and those whose worth is both tangible and intangible. All share a common dependence, that is, that the current condition of the New Orleans Coastal Region will not be radically altered.

In summary, tourism in New Orleans is of great economic value and is closely related to the viability of the coastal zone. 4.4 million people visit New Orleans annually creating a $436 million dollar industry. Because it is the city's fastest growing industry, there is a need for more family oriented activities. The potential for increasing tourism, providing recreational space for local residents and expanding the local employment exists in an expansion of water oriented activities.

5

Governmental Agencies Exercising Control Over Environmental Quality

A knowledge and understanding of the responsibilities and areas of jurisdiction of involved governmental agencies at all levels is necessary so as to ensure that all applicable rules and regulations are adhered to in managaing the coastal zone and to draw upon the resources and expertise possessed by these agencies The following is an annotated inventory of those federal state and local governmental agencies concerned with the coastal zone

Special Expertise or Authority of Departments In Areas of Environmental Concern

Since there are a wide variety of environmental concerns associated with the coastal zone many federal state and local agencies are involved These agencies have varying degrees of involvement In order to aid in identifying the agencies and their area of authority an environmental matrix was developed using the August 1 1973 Council on Environmental Quality guidelines for Preparation of Environmental Impact Statements as a guide

This section identifies which governmental agencies have control powers require information for planning and management purposes or dispense information to others for use in planning or operations The control funding or coordinating functions of the agencies have been identified for the environmental areas subject to management and other responsibilities of the agencies such as research and development planning management inventorying and operations or maintenance have been identified The agency functions or activities were obtained from the U S Government Organization Manual and discussions from the BNA Environment Reporter and the report prepared by the Louisiana Advisory Commission on Coastal and Marine Resources entitled Louisiana Government and the Coastal Zone 1972 No verification has been made as yet with the agencies themselves

Federal Agencies

Agricultural Research Service Department of Agriculture

OBJECTIVE Provide information and technical advice to farmers on matters of food production agricultural techniques and soil conservation

ACTIVITY Conducts research in the fields of plant science entomology soils water marketing and nutrition

RELATIONSHIP WITH CZM

Source of information on conservation methods agricultural techniques and research results

CONTACT Agriculture Research Service
Department of Agriculture
1110 Robert E Lee Blvd
New Orleans Louisiana

Forest Service Department of Agriculture

OBJECTIVES 1) promote and achieve a pattern of natural resources uses that will best meet the needs of people now and in the future 2) protect and improve the quality of air water soil and natural beauty 3) help protect and improve the quality of the open space environment in urban and community areas (3 of 11 objectives)

FUNCTIONS Cooperates with agencies in the protection reforestation management and use of forested lands and associated lands vital for watershed protection

RELATIONSHIP WITH CZM

Should be consulted regarding the preservation of cypress trees and other environmentally endangered vegetation as well as urban forestry planning for this type of environment

CONTACT Director South Eastern Area
U S Forest Service
1720 Peachtree Road N W
Atlanta Georgia 30309

Soil Conservation Service Department of Agriculture

OBJECTIVES AND RESPONSIBILITIES

Develop and carry out a national soil and water conservation program in cooperation with land users community and planning groups and other agencies

ACTIVITIES Conservation operations soil surveys watersheds recreation resource conservation and development

RELATIONSHIP WITH CZM

Consul ation regarding prese t soil conditions as well as long range watershed projects or plans

National Bureau of Standards Department o Commerce

PURPOSE Provide technical services to promote publ c safety and the basis for nation s physical measuren ent system

FUNCTIONS AND ACTIVITIES

Information programs (Nat l Std Ref Data System) inst tute for basic standards materials research applied technology cel ter computer sciences

RELATIONSHIP WITH CZM

Co sultation only for information regarding technical adequacy water quality standards and air and noise pollut on measurement stand ards

ational Oceanic and Atmospheric Ad ministration Department of Comr erce

PURPOSE Chart and t slate new physical and biological knowledge into sys ems capable of assessing the sea s poten ial yield

( ) manage use and conserve these animal and mineral resources
(2) warr against impending environmental haz ards

FUNCTIONS AND ACTIVITIES

Issues weather warnings conducts biological research on the l ving resources of the sea

RELATIONSHIP WITH CZM

Consul ation mainly regarding the fund ng of marine projects and the monitoring of marine life and wel a e

CONTACT National Marine Fisheries Service
Sou h East Region
144 Fi st Avenue South
St Petersburg Florida 33701

Corps of Engineers Department of Defense

ACTIVITIES Survey programs include prep ion coordination and filing of environmental impact s ater ents regional or river basin studi s w stewater m nagement and urban stud es and flood plain ma agement (provides information and technical assistance) regulatory functions d edg ng acti ities construction and planning inc ude recreation acilit es and projects in the Mississi ppi River area

RELATIONSHIP WITH CZM

Permitting agency fo dredging activ es con sultation regarding flood plain m nage ent and futu e flood control planning in the project area

CONTACT Corps of Engineers
4400 D uphine
New Orleans Louisiana

Depart ent of Health Education nd Welfare

PURPOSE P on o e general welfare in the fields of health education and social security

ACTIVITIES Community environmental management neigh borhood environmental evaluat on and decision system

RELATIONSHIP WITH CZM

Inform a ion and consulta ion E vironment l Evalua on D cision System (NEEDS to carry out community health prog ams or for potential HEW research ac v ties

Depart ent of Housing and Urban Development

OBJECTIVES Assist in providing for sound development of com munities and metropolitan areas

ACTIVITIES Grants for basic water and sewer facilities program administration open space land programs public facility loans research and technology environmental quality public utilities and technology application waste management systems demonstrations research noise abatement and control and environmental hazards urbanization effects on physical environment and effects of recreational communities on rural areas

RELATIONSHIP WITH CZM

Lead agency for the review and preparation of an EIS for federally funded residential developments Approval necessary for flood plain protection siting in noise controlled areas and the waste management system employed

Region VI Area Office
New Orleans
1001 Howard Avenue
New Orleans La 70113
504 527 1062

Regional Office
Dallas Texas

Geological Survey Department of Interior

OBJECTIVES Perform surveys investigation and research research covering topography geology and minerals and water resources classify land as to mineral character and water and power resources enforced regulations apply to oil gas and other mineral leases

ACTIVITIES Conservation geology topographic mapping water resources eros program Supervise operations of private industry for oil and gas leases on public lands to ensure maximum utilization limit environmental damage and pollution and protect public health and safety

RELATIONSHIP WITH CZM

Consultation regarding current geologic conditions and the effects of various projects on them Monitors and surveys water quality conditions

ADDRESS Geology Survey
1100 Commerce
Dallas Texas

Bureau of Indian Affairs Department of Interior

OBJECTIVES To encourage and train Indians to manage their own affairs and to aid them

RELATIONSHIP WITH CZM

This agency should be consulted for the historical aspects of archaeological sites to ensure that proper management and enhancement are assured

Bureau of Land Management Department o Interior

PURPOSE Classifies manages and disposes of public lands and related resources according to principles of multi use management

ACTIVITIES Administers the laws and is responsible for nations federal lands responsible for survey of federal lands and maintains public land records manages watersheds to protect soil and enhance water quality

According to CEQ provide for protection of public land resources public land inventory and planning and environmental analysis public land management Detailed planning and feasibility studies recreation and wildlife inventory planning and development programs

RELATIONSHIP WITH CZM

Consultation regarding long term plans or area if land were public their evaluation of possible land uses and coordination with other federal agencies

Bureau of Mines Department o Interior

OBJECTIVES Conducts research and administers regulatory programs necessary for performance of the governmental function to stimulate the private sector toward the production of an appropriate

and substantial share of the national mineral and fuel needs to best suit public.

ACTIVITIES: Health and safety programs, mineral resources and environmental development - studies and projects concerning the relationship of the mineral industry to environmental problems.

RELATIONSHIP WITH CZM:

Consultation and information during planning and development stages. If future pipelines are installed, or mineral resources developed on the area, the Bureau would organize safety and management programs.

Office of Oil and Gas - Department of Interior

OBJECTIVES: Serve as a focal point for leadership and information on petroleum matters in the federal government.

ACTIVITIES: Develops, evaluates, and coordinates oil and gas information to provide some bases for establishment and implementation of gas and oil and gas policies and programs; studies effects of oil and gas production, transportation, manufacturing and consumption on environment and reviews for accuracy and completeness the EIS which relate to oil and gas.

RELATIONSHIP WITH CZM.

Information and consultation during project planning and initial development. If the need for oil or gas supplies develops at a later period or drilling takes place, they would determine whether this is likely to occur.

Bureau of Reclamation - Department of Interior

OBJECTIVES: Stabilize and promote the growth of local and regional economies through development of water and land resources. Reclamation projects include water quality improvement, fish, wildlife enhancement, outdoor recreation, flood control.

ACTIVITIES: Investigate and develop plans for regulations, conservation of water and related land resources;

ADDRESS: Region 5
Herring Plaza
317 E. Third
Box 1609
Amarillo, Texas 79105

RELATIONSHIP CZM:

Information and consultation as to the conservation of the land resources in the area.

Bureau of Outdoor Recreation - Department of Interior

OBJECTIVES: Government responsibility for outdoor recreation and the enhancement and protection of the environment.

ACTIVITIES: Establishes uniform policies relating to recreation and wildlife, benefits and costs of federal multipurpose water resources projects, inventory of outdoor recreation needs, maintains a comprehensive nationwide outdoor recreation plan.

RELATIONSHIP WITH CZM:

Information and consultation as to recreational facilities and information regarding types of facilities best suited for this environment.

National Park Service - Department of Interior

OBJECTIVES: Administers national parks, monuments, historic sites, and recreation areas.

ACTIVITIES: Assists states in conservation and park management.

ADDRESS: Southeast regional office
3401 Whipple Street
Atlanta, Georgia 33044

RELATIONSHIP WITH CZM:

Information and consultation. If any of the area

became federal land, the Park Service issues use permits.

Bureau of Sport Fisheries and Wildlife - Department of Interior

OBJECTIVES: Understanding and enjoyment by people of the sport fish and wildlife resources, operates nationwide system of refuges, regulates migratory bird hunting, improves and protects quality of environment for fish and wildlife resources.

ACTIVITIES: Fishery programs, wildlife programs, training programs, financial assistance programs, environmental coordination and river basin studies.

ADDRESS: Regional Office
809 Peachtree - Seventh Bldg.
Atlanta, Georgia 30323

RELATIONSHIP WITH CZM:

Responsible for the enforcement of federal conservation laws for the protection of birds, fish, amphibians and reptiles. Also coordinates state and local game management.

Occupational Safety and Health Administration - Department of Labor

OBJECTIVES: Responsible for occupational safety and health activities.

ACTIVITIES: Develop and promulgates occupational safety and health standards; develops issues and regulations; issues citations for non-compliance with standards; conducts investigations and inspections to determine status of compliance.

RELATIONSHIP WITH CZM:

Will investigate and inspect the noise, physical and chemical conditions during construction taking place in the area for the health and safety of the workers.

ADDRESS: Area Office
546 Carondelet Street
New Orleans, Louisiana

Department of Transportation - Assistant Secretary for Systems Development and Technology

ACTIVITIES: Research and development of methods of abatement of noise generated by transportation equipment.

RELATIONSHIP WITH CZM:

Consultation and information regarding agency research and development projects.

Federal Aviation Administration - Department of Transportation

MISSION: Regulation of air commerce and foster aviation safety.

ACTIVITIES: Develop rules and regulations for control and abatement of aircraft noise; develop rules and regulations for control and abatement of aircraft emissions to comply with EPA Standards.

RELATIONSHIP WITH CZM:

Consultation and information. The Regional FAA Office is familar with long range airport planning in the area which can affect noise and air pollution and also ground transportation patterns.

ADDRESS: Regional Office
8345 Telephone Road
Houston, Texas 77017

Coast Guard - Department of Transportation

OBJECTIVE: Maritime law enforcement

ACTIVITIES: Maritime environmental protection including ocean operations, pollution control facilities, marine safety and research, development, test and evaluation. Will be the federal agency having expertise in water quality, oil spills, ship sanitation and marine pollution.

ADDRESS: 8th District
Custom House
New Orleans, La. 70130

RELATIONSHIP WITH CZM:

If boats are used in recreational areas, they will be responsible for monitoring oil spills and enforcing boat sanitation.

Environmental Protection Agency

OBJECTIVES: To permit coordinated and effective governmental action to assure protection of the environment by the systematic abatement and control of pollution through proper integration of a variety of research, monitoring, standard setting and enforcement activities.

ACTIVITIES: Pesticides, solid waste and radiation, air and water programs - standards development, direction, support and evaluation of activities; development of programs for technology transfer and technical assistance, demonstration programs, planning and management; research and monitoring; research centers.

ADDRESS: Region IV
1600 Patterson Street
Dallas, Texas 75201

RELATIONSHIP WITH CZM:

Enforces air and water quality conditions; consultation and information regarding pollution effects on the marshes and swamps.

Federal Power Commission

OBJECTIVE: Regulates the interstate aspects of the electric power and natural gas industries.

ACTIVITIES: Issues certificates for interstate gas sales and construction and operation of interstate pipeline facilities, issues licenses to non-federal entities for using surplus water for power.

RELATIONSHIP WITH CZM:

If additional pipelines are needed, in the Coastal Zone Management area the Commission would issue the construction permits.

Interstate Commerce Commission

OBJECTIVES: To regulate carriers engaged in transportation in interstate commerce, including water carriers, oil pipelines, bus lines.

ACTIVITIES: Regulates transportation economics and services

RELATIONSHIP WITH CZM:

To regulate pipeline activities presently located on the area.

National Aeronautics and Space Administration

OBJECTIVES: That activities in space be devoted to peaceful purposes for the benefit of mankind including the effective utilization of scientific and engineering resources in U.S., the dissemination of information concerning NASA's activities, as well as the solution of problems of flight.

ACTIVITIES: Space applications program, pollution monitoring, satellite observation, manned space flight.

RELATIONSHIP WITH CZM:

Monitor pollution and land use changes via satellite.

National Endowment for the Arts

OBJECTIVES: To encourage and support national progress in the humanities and the arts by providing opportunities for worker experience in the arts.

ACTIVITIES: Awards grants to individuals and State Arts Councils, encourages dissemination of the arts and supports the improvement of cultural institutions.

RELATIONSHIP WITH CZM:

Consultation regarding Indian mounds and historical army forts in area as well as possible funding of cultural activities at recreational facilities.

SPECIAL EXPERTISE OR AUTHORITY OF FEDERAL AGENCIES IN AREAS OF ENVIRONMENTAL CONCERN

LEGEND
1 Enforcement
2 Regulatory Permit Giving
3 Monitoring
4 Criteria Standard Setting
5 Coordination
6 Funding
* Information Required

ENVIRONMENT SUBJECT TO MANAGEMENT	Department Of Agriculture	Agricultural Stabilization And Conservation Service	Soil Conservation Service	Forest Service	Agricultural Research Service	Department Of Commerce	National Oceanic And Atmospheric Administration	National Marine Fisheries Service	National Bureau Of Standards	Department Of Defense	U.S. Army Corps Of Engineers	Office Of The Oceanographer	Department Of Interior	Bureau Of Land Management	Bureau Of Indian Affairs	Bureau Of Sport Fisheries And Wildlife	National Park Service	Office Of Land Use And Water Planning	Bureau Of Reclamation	U.S. Geological Survey	Office Of Oil And Gas	Bureau Of Mines	Power Marketing Administration	Department Of Housing And Urban Development	Federal Power Commission	Environmental Protection Agency	N.E.S.A.	National Environment For The Arts	Advisory Council On Historic Preservation	Water Resources Council	Department Of Transportation	U.S. Coast Guard	Assistant Secretary For Systems Development	Federal Aviation Administration	Urban Mass Transportation Administration	Federal Highway Administration	Department Of Local Affairs	Department Of Health, Education & Welfare	Department Of Interior, Environment & Welfare	Department Of Commerce, Commission
1 Natural Environment																																								
A Land																																								
i soil and plant life, sedimentation, erosion and hydrological conditions		5	●	3		●				●		●		●			●		●				●			●												●	
ii fish and wildlife		6				6						●			●								●																
iii protection of environmentally critical areas - wetlands, estuaries, waterfowl refuges, flood plains	6*	●				3	●		6			●		3	●	●	●	●	●			4		3	3			5											
iv land use in coastal areas																																							
a planning and regulation			●	●						●			2,3,6	●	●	●		●				6			3													
b dredge and fill permits									2																														
c impact on marine life and coastal zone management						●																																	
d pollution effects										●														●														
v vector control																								●														
B Noise							4																														4		
i land use and building material parts																						4																	
C Air Quality and Pollution Control			●			●				●														3,6	3														
D Water																																							
i water quality and pollution control		●		3		●			2,5			●		3,5	●			●	3					2,3,6	3			5		1,3								●	
ii water supply																																							
iii commercial fishery conservation and shellfish sanitation						●			●					3,6	●										3	3			5,6									
iv waterway regulation and stream modification		4,5							6						●			6						●				5									●	
2 Social Environment																																							
A Historic, Architectural, and Archeological Preservation												●	5			●																							
B Outdoor Recreation		●	●					6				5		●	●	2									●	3			5									
C Municipal Services																																							
D Health																																							
3 Man Made Environment																																							
A Natural Gas Development, Production, Transmission and Use												3		●					5			5	●	●														2
B Electrical Energy Development, Generation, Transmission, and Use									●					●								5	●					5										
C Solid Waste						●			2			●						●				●		4,6				5		1,3								●	
D Infrastructure																																							
i transportation																																							
ii Utilities																																							
iii sanitation and waste systems																																							

Water Resource Council

OBJECTIVES: To maintain a continuing study of the adequacy of supplies of water necessary to meet requirements in each water resource region, the adequacy of administrative and statutory means for the coordination of the water and related land resources policies and programs of federal agencies; review plans of basin commission.

ACTIVITIES: Administers programs of grants to states to aid in comprehensive water and related land resources planning, as well as see objectives.

RELATIONSHIP WITH CZM:

Information and consultation since the council coordinates water and related land resources policies and programs of several federal agencies.

State Agencies

Air Control Commission

OBJECTIVES: To maintain purity of the air resources of the state consistent with the protection of the health and physical property of the people, maximum employment and the full industrial development of the state.

ACTIVITIES: Planning; adopts and promulgates rules; fact finding; hold hearings, institute legal proceedings; use other state agencies to effect its policies; sole source enforcement of air quality in Louisiana.

RELATIONSHIP WITH CZM:

Enforce air quality conditions; consultation and information regarding air pollution effects on health and property.

Board of Nuclear Energy

OBJECTIVES: Responsible for the formulation, establishment and implementation of policies and programs supporting atomic energy.

ACTIVITIES: Controls radiation sources, educates citizens and state agencies regarding technological advances in the uses of nuclear power; inspects facilities for compliance with health and radiation regulation programs. Sole source for radiation enforcement and regulation.

RELATIONSHIP WITH CZM:

Enforcement and regulation of radiation pollution; licenses and monitors radioactive equipment which may be used in the industrial, commercial or institutional facilities located in the area.

Department of Agriculture

OBJECTIVES: To promote, protect and advance agriculture within the state.

ACTIVITIES: Registers, monitors and regulates pesticide usage; regulates the use of fertilizers; sets standards for controlling livestock wastes, maintains an agriculture extension service which advises citizens on home gardening, landscaping and herbicide and pesticide usage.

RELATIONSHIP WITH CZM:

Consultation and information regarding landscaping and herbicide and pesticide usage.

Department of Conservation

OBJECTIVES: Responsible for conserving the mineral, oil and gas resources of the state.

ACTIVITIES: Inquires and investigates whether waste of resources exists; grants permits for building and operating plans to burn natural gas and carbon black; cooperates with Department of Health and the Stream Control Commission in issuing permits for disposal of waste by subsurface injections. Department of Conservation consists of: Inspection and Enforcement Section; Engineering Division; Geological Survey Division; and Administrative Section.

RELATIONSHIP WITH CZM:

When oil or any other mineral is found, a drilling permit must be obtained from the department.

Department of Highways

ACTIVITIES: Studies, administers, constructs, maintains, repairs and regulates the use of the state highway system; aid in construction and repair of public roads not included in state highway system; enforces laws concerning highway beautification.

RELATIONSHIP WITH CZM:

Consultation and information during the planning and initial development stages to determine highway capacities. Aid in maintaining and constructing any additional roadways which will be built.

Health Department

OBJECTIVES: To promote health and welfare of Louisiana citizens and administer the state-wide solid waste management program.

ACTIVITIES: Regulates health related discharges into water; responsible for surveying public water supplies for safety from disease transmission and quality and semipublic and home water supplies; controls sanitary sewage disposal which includes inspection of facilities and sampling discharges; surveillance of the atmosphere for contaminants; preparing a state-wide inventory of all air emissions; assist in enforcement of air control regulations to minimize or eliminate outdoor burning; inspects and evaluates solid waste disposal facilities; inspects recreational areas to ensure proper sanitary conditions; survey, sample and evaluate oyster growing waters for safety of consumption of harvested oysters; inspects, investigates and studies occupational health hazards; inspects, monitors and regulates wholesale produce and the importation of food and drugs; radiation monitoring of air, water and food.

RELATIONSHIP WITH CZM:

Regulate local operations affecting the environment such as solid waste collection, storage and disposal, and water supply. Reviews and approves wastewater, solid waste and water supply plans.

Mineral Board

OBJECTIVES: To lease state-owned lands for the development and production of minerals, oil and gas.

ACTIVITIES: Grants leases for mineral leases; supervises the leases and can revoke them.

RELATIONSHIP WITH CZM:

Information and consultation

Department of Public Works

ACTIVITIES: Administers the planning, design, construction and operation of levees, canals, dams, locks, spillways, reservoirs and other public works projects; fosters the maintenance, improvement and extension of the intracoastal canal system; initiates, sponsors and implements all waterway projects within Louisiana; drains marshlands and overflow lands within the state to control floods and allow use of the lands for agriculture and other purposes; assists various planning agencies; issues rules and regulations concerning the location of pipelines crossing navigable waterways. Consists of an engineering division with hydraulics, water resources, structural design and planning, reports, and resources development sections; and a lands and survey section.

RELATIONSHIP WITH CZM:

Information and consultation regarding construction near pipelines, and construction of levees or dikes for improved flood protection.

Recreational Advisory Council

OBJECTIVES: To act in a review and comment capacity concerning matters or programs affecting the quality of outdoor recreation.

ACTIVITIES: Reviews recreation related programs; supervise long-range recreations planning; handles federal funding requests, coordinates applications of other state agencies for federal aid.

RELATIONSHIP WITH CZM:

Information and consultation

State Land Office

OBJECTIVES: Responsible for state-owned lands including location, description, right-of-way, surface leases and royalty collection.

ACTIVITIES: Locates, surveys, appraises and evaluates state lands; decides on land lease requests, recreation permits for navigable waterways; right-of-way requests; collection of mineral royalties.

RELATIONSHIP WITH CZM:

Information and Consultation

State Parks & Recreation Commission

OBJECTIVES: To establish and maintain a parks and recreational program for the state.

ACTIVITIES: Park protection, administration, rule enforcement; assists other state agencies in park site selection; advises on all matters which may affect the quality of outdoor recreation. Issues park permits, coordinates with Bureau of Outdoor Recreation.

RELATIONSHIP WITH CZM:

If any of the recreational sites in the area become State parks, the commission will be responsible for park permits and rule enforcement.

State Planning Office

OBJECTIVES: To serve as the Governor's state wide planning agency.

ACTIVITIES: Coordinates state-wide planning; conducts basic planning studies; reviews planning efforts of all state agencies as well as municipal and regional commissions; administers federal programs for planning purposes; makes funding recommendations provides assistance to subsidiary governmental bodies.

RELATIONSHIP WITH CZM:

This agency will probably be the state's Coastal Zone Management Agency and therefore, will be responsible for the formulation of a state CZM Plan and for the review and approval of local CZM plans.

State Soil & Water Conservation Committee

ACTIVITIES: Advise, consult and assist on matters of soil conservation.

RELATIONSHIP WITH CZM:

Information and consultation

Stream Control Commission

OBJECTIVES: To regulate and coordinate municipal and industrial water pollution control.

ACTIVITIES: Makes and promulgates water pollution control rules and regulations, monitors water quality; establishes wastewater treatment needs and schedules. Issues, suspends and revokes waste discharge permits.

RELATIONSHIP WITH CZM:

Regulatory agency which will issue, suspend or revoke waste discharge permits.

SPECIAL EXPERTISE OR AUTHORITY OF STATE AGENCIES IN AREAS OF ENVIRONMENTAL CONCERN

LEGEND
1 Enforcement
2 Regulatory Permit Giving
3 Monitoring
4 Criteria Standard Setting
5 Coordination
6 Funding
• Information Required

ENVIRONMENT SUBJECT TO MANAGEMENT	Air Control Commission	Board On Nuclear Energy	Department Of Conservation	Department Of Highways	Department Of Public Works	Governor's Council On Environmental Quality	Health Department	Lake Pontchartrain Sanitary Commission	Louisiana Advisory Commission On Coastal And Marine Resources	Citizens Advisory Board To The Governor's Council On Environmental Quality	Louisiana Coastal Commission	Mineral Board	Orleans Levee District	State Department Of Art And Historical & Cultural Preservation	State Land Office	State Parks And Recreation Commission	State Planning Office	State Soil And Water Conservation Committee	Stream Control Commission	Water Resources Study Commission	Wildlife And Fisheries Commission
1 Natural Environment																					
A Land																					
i soil and plant life, sedimentation, erosion and hydrological conditions			3											•		3,6					
ii fish and wildlife						•		•		•						•	•		•		
iii protection of environmentally critical areas - wetlands, estuaries, waterfowl refuges, flood plains	•				•	•		•		•		•		•	•		•	•	1,3		
iv land use in coastal areas																					
a planning and regulation			•		•	•	3		•		•	•	•		•		•	5			1
b dredge and fill permits																					2,3
c impact on marine life and coastal zone management			•					•		•								•	•		
d pollution effects																		•			
v vector control							•														
B Noise						•															
i land use and building material parts																					
C Air Quality and Pollution Control	1,2	•				•															
D Water																					
i water quality and pollution control		•			•	•	1,2,3	•	•		•								1,2	•	2,3
ii water supply					•		1,2,3												3	•	
iii commercial fishery conservation and shellfish sanitation							3	•	•		•		•					•			1,2,3
iv waterway regulation and stream modification					2			•				•						•			
2 Social Environment																					
A Historic, Architectural, and Archeological Preservation													•		•						
B Outdoor Recreation				•					•		•			•	?		•				2
C Municipal Services							3														
D Health		•					•														
3 Man Made Environment																					
A Natural Gas Development, Production, Transmission and Use																					
B Electrical Energy Development, Generation, Transmission, and Use																					
C Solid Waste			2																		
D Infrastructure																					
i transportation				•								•									
ii utilities												•									
iii sanitation and waste systems								•		•											

Water Resources Study Commission

OBJECTIVES: To study the state's water policy and its adequacy, recommend revisions and methods for implementing the revisions.

ACTIVITIES: Studies of ground water resources and draft state-wide ground water control law.

RELATIONSHIP WITH CZM:

Consultation and information

Wildlife and Fisheries Commission

OBJECTIVES: To be responsible for making and enforcing administrative policies for protecting, conserving and replenishing the living resources of the state.

ACTIVITIES: Concerned with commiercial and sport fishing; birds and game leasing of state-owned water bottoms, water pollution control, maintenance and operation of fish and game preserves; biological research. Commission enforces rules and regulations, issues licenses, has jurisdiction over state water bottoms, establishes game and wildlife preserves. Issues permits for shell, sand and gravel dredging and fill work. Assists in the enforcement of water pollution control regulations. Advises the Governor on environmental impact matters.

RELATIONSHIP WITH CZM:

Enforce the State fish license program; issue permits for intended fill and dredging work.

Local Agencies

Department of Fire

OBJECTIVE: Prevent fires.

ACTIVITIES: Fire fighting; structural inspection; controls outdoor burning.

RELATIONSHIP WITH CZM:

Maintain fire protection and prevention facilities.

New Orleans Department of Health

ACTIVITIES: The Bureau of Pollution Control, within the department handles water, solid waste, noise and radiation control. This includes air surveillance for the state through a network of sampling stations, the inspection of outdoor burning sites, water quality monitoring, development of city noise, profiles and training of personnel in a radiation program. The Bureau of Personal Health Protection is responsible for accident prevention, inspection of areas using foods and drugs, and other health or medical facilities.

RELATIONSHIP WITH CZM:

This city agency will be the most involved in programs protecting the environment.

Department of Safety & Permits

ACTIVITIES: Issues building permits and inspects construction areas.

RELATIONSHIP WITH CZM:

Issue building permits for construction

Department of Sanitation

OBJECTIVES: To collect and dispose of solid waste and clean the streets.

ACTIVITIES: Monitors the collections, issues citations for unlawful deposit of waste on public property and manages the Mosquito Control Program. The mosquito program includes adultaciding, source control and permanent land control for 43 species of mosquitoes.

RELATIONSHIP WITH CZM:

Heavily involved in mosquito control and other

vector control aspects; they will also be responsible for the waste collection.

Department of Streets

ACTIVITIES: Constructs and maintains city streets and carries out traffic engineering and safety for the city.

RELATIONSHIP WITH CZM:

The department will maintain streets and aid the traffic engineering.

New Orleans City Planning Commission

ACTIVITIES: Zoning and Land Use Planning. Responsible for preparing plans and programs relating to the development of the City of New Orleans.

RELATIONSHIP WITH CZM:

Responsible for the development and modifying the city's master plan, and all its components.

New Orleans Recreation Department

ACTIVITIES: Administers the playgrounds and regional programs for the city.

RELATIONSHIP WITH CZM:

The recreational areas will be under their jurisdiction.

Regional Planning Commission of Jefferson, Orleans, St. Bernard and St. Tammany Parishes.

OBJECTIVES: To coordinate area-wide planning.

ACTIVITIES: Prepare and review plans and programs of a regional scope to insure that plans and programs of local entities making up the Commission are compatible with the plans of the region as a whole.

RELATIONSHIP WITH CZM:

To coordinate project planning with long range regional plans.

SPECIAL EXPERTISE OR AUTHORITY OF REGIONAL AND CITY AGENCIES IN AREAS OF ENVIRONMENTAL CONCERN

LEGEND
1 Enforcement
2 Regulatory Permit Giving
3 Monitoring
4 Criteria Standard Setting
5 Coordination
6 Funding
• Information Required

ENVIRONMENT SUBJECT TO MANAGEMENT	Regional Planning Commission of Jefferson, Orleans, St Bernard, and St Tammany Parishes	Department of Public Works	Department of Parks and Parkways	Department of Health	Department of Safety & Permits	Department of Streets	Sewerage & Water Board of New Orleans	New Orleans City Planning Commission
1 Natural Environment								
A Land								
i soil and plant life, sedimentation, erosion and hydrological conditions								
ii fish and wildlife								
iii protection of environmentally critical areas - wetlands, estuaries, waterfowl refuges, flood plains	•						•	
iv land use in coastal areas								
a planning and regulation	•						•	
b dredge and fill permits								
c impact on marine life and coastal zone management								
d pollution effects								
v vector control			•		?			
B Noise			1,3					
i land use and building material parts				•				
C Air Quality and Pollution Control	•	2	1,2		?			•
D Water								
i water quality and pollution control	•		1,2				•	•
ii water supply	•		1,2				•	•
iii commercial fishery conservation and shellfish sanitation								
iv waterway regulation and stream modification								
2 Social Environment								
A Historic, Architectural, and Archeological Preservation								
B Outdoor Recreation			?	•				
C Municipal Services		•	•			•		
D Health			1,2					
3 Man Made Environment								
A Natural Gas Development, Production, Transmission and Use								
B Electrical Energy Development, Generation, Transmission, and Use								
C Solid Waste	•		1,2,3				•	
D Infrastructure								
i transportation								
ii utilities								
iii sanitation and waste systems			•			•	•	

Sewerage & Water Board of New Orleans

OBJECTIVES: Responsible for all water purification, drainage and waste water treatment in Orleans Parish.

ACTIVITIES: Operates water, wastewater and drainage utilities. Regularly monitors water supply; carries out water pollution studies. Maintains and enforces sewer and drainage regulations.

RELATIONSHIP WITH CZM:

The Board will be responsible for water supply and will maintain and enforce the sewer and drainage regulations.

6

Existing Local Control Mechanisms

On the local level, the three major control mechanisms which exist to control land uses are the Municipal Code of the City of New Orleans, the Building Code, and the Comprehensive Zoning Ordinance. These legal devices however, lack a recognition of the problems peculiar to wetlands areas. The needed mechanism for ensuring that a high quality estuarine environment is maintained and that only land uses appropriate to the wetlands environment are permitted do not presently exist. This deficiency in the city's legal authorization and control guidelines can,however, be eliminated through appropriate legislative measures. Legal authorization for the management of estuarine areas within the City of New Orleans can be accomplished through amendments to the existing Municipal and Building Codes and Comprehensive Zoning Ordinance. By so doing, the following goals can be attained:

1) the provision of adequate open space and recreational areas for the benefit of citizens of the New Orleans Metropolitan area, and the state of Louisiana.

2) the perpetual protection of the economic and ecologic resources represented by the natural environment; and,

3) the establishment of land use guidelines and priorities in estuary areas.

The specific sections of existing laws which should be amended are Chapter 32 of the Municipal Code of the City of New Orleans; Part III, Articles 201 through 203 of the Building Code of the City of New Orleans; and, addition of a Section 27 to the Comprehensive Zoning Ordinance.

These Ordinances and the proposed amendments follow.

The Municipal Code of the City of New Orleans, in Chapter 32, authorizes the city to regulate land uses. Chapter 32 reads as follows:

A recent amendment to the Municipal Code, noted here because it is an important mechanism for the control of development in flood prone areas, is the so-called "Flood Insurance Ordinance" of November 7, 1974. This Ordinance is reproduced below:

ORDINANCE

CITY OF NEW ORLEANS

CITY HALL: November 7, 1974

CALENDAR NO. 6065

NO. 5584 MAYOR COUNCIL SERIES

BY: COUNCILMAN CIACCIO (BY REQUEST)

AN ORDINANCE to amend and reordain Ordinance No. 828 M.C.S., known as the Code of the City of New Orleans, by amending and reordaining Chapter 32 thereof relative to land use and control measures.

SECTION 1. THE COUNCIL OF THE CITY OF NEW ORLEANS HEREBY ORDAINS, That Ordinance No. 828 M.C.S., known as the Code of the City of New Orleans, is hereby amended and reordained by amending and reordaining Chapter 32 thereof to read as follows:

CHAPTER 32

LAND USE AND CONTROL MEASURES

Article V	Use of Coastal High Hazard Areas
Article VI	Utilization of Neighborhing Flood Management Programs
Article VII	Waiver of Regulations
Article VIII	Penalties for Violation of Land Use and Control Measures for Flood Prone Areas
Article IX	Conflicting Flood Prone Area Regulations with other Ordinances.

ARTICLE I. PURPOSE OF CHAPTER

Section 32-1. Purpose of Chapter

The principal purpose of these regulations is to prescribe minimum requirements for land use and control measures for flood-prone areas in the City of New Orleans, as determined by the Federal Insurance Administration (FIA) of the Department of Housing and Urban Development. These regulations are based upon relevant technical storm data specific to Orleans Parish, as developed by the U.S. Corps of Engineers for the F.I.A. These measures must be applied uniformly throughout the community to all privately and publicly owned land within flood prone areas, based upon standards set forth in these regulations, as prescribed by the Federal Insurance Administrator.

Official flood maps entitled FIA Flood Hazard Boundary Maps No. H 22071 0000 02-30 are hereby made a part of these regulations and are on file with the City Planning Commission and the Department of Safety and Permits.

ARTICLE II DEFINITIONS

Section 32-2. Definitions

"substantial improvement" means any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds 50 percent of the actual cash value of the structure either (a) before the improvement is started or (b) if the structure has been damaged and is being restored, before the damage occurred. Substantial improvement is started when the first alteration of any structural part of the building commences.

"new construction" - the first placement of permanent construction on a site, such as the pouring of slabs or footings or any work beyond the stage of excavation. For a structure without a basement or poured footings, the start of construction includes the first permanent framing or assembly of the structure or any part thereof or its pilings or foundation, or the affixing of any prefabricated structure or mobile home to its permanent site. Permanent construction does not include land preparation, land clearing, grading filling; excavation for basement, footings, piers, or foundations; erection of temporary forms; installation of sewer, gas and water pipes, or electric or other service lines from the street or existence on the property of accessory buildings, such as garages or

sheds, not occupied as dwelling units or not a part of the main structure.

"residential structures" - a building or portion thereof, designed or used exclusively for residential occupancy but not including trailers, hotels, motels, motor lodges.

"special flood hazard areas" - areas within the flood plain that have been designated by the Federal Insurance Administrator on official flood hazard boundary maps as "special flood hazards" which may be flooded in the event of a 100 year flood.

"special flood hazard maps" - an official map or plat of a community, issued or approved by the Administrator on official flood hazard boundary maps as "special flood hazards"; which may be flooded in the event of a 100 year flood.

"flood hazard boundary maps" - an official map or plat of a community, issued or approved by the Administrator, on which the boundaries of the flood plain and/or mudslide areas having special hazards have been drawn. This map must conform to the Special Flood Hazard Map and be of sufficient scale and clarity to permit the ready identification of individual building sites as either within or without the area having special flood hazards.

"Federal Insurance Administrator" - the individual to whom the Secretary of the Department of Housing and Urban Development has delegated the administration of the program (34F.R. 2680-81, February 27, 1969).

"100-year flood (storm)" - the highest level of flooding that, on the average, is likely to occur once every 100 years (i.e., that has a 1.0 percent chance of occuring each year).

"floodproofed" - any combination of structural and non-structural additions, changes, or adjustments to properties and structures which reduce or eliminate flood damage to lands, water and sanitary facilities, structures, and contents of buildings.

"Director" - the Director of the Department of Safety and Permits of the City of New Orleans.

"coastal high hazard areas" - the portion of a coastal flood plain having special flood hazards that is subject to high velocity waters, including hurricane wave wash and tsunamis.

"flood plain management program" - the operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works, and land use and control measures.

"Land use and control measures" - zoning ordinances, subdivision regulations, building codes, health regulations, and other applications and extensions of the normal police power, to provide standards and effective enforcement pro-

visions for prudent use and occupancy of flood-prone and mudslide areas.

ARTICLE III. BUILDING PERMITS REQUIRED

Section 32-3. Securing of Permit

It shall be unlawful to proceed with any new construction, substantial improvement or major repair to a building within the City of New Orleans without having previously obtained a permit properly numbered and approved from the Director of the Department of Safety and Permits.

It shall be the duty of the Department of Police to see that such work requiring a permit is authorized and to report the absence of a permit to the Director. All work must comply with the Building Code, as well as these regulations, and shall be subject to inspection whether a permit is required or not, at the discretion of the Director.

Section 32-4. First floor elevation required

All building permits issued for new construction or substantial improvements must have imprinted upon them the mean sea level elevation of the lowest floor (including basement) and the base Flood Level of the 100-year storm. Said elevation requirements apply to all new residential and non-residential structures as well as substantial improvements.

However, if the non-residential structure and its attendant utility and sanitary facilities are located below the level of the prescribed base flood elevation, then the non-residential structure and its attendant utility and sanitary facilities must be floodproofed up to the level of the prescribed base flood elevation.

Section 32-5. Requirement for lowest floor of new construction to be elevated at or above the level of the 100-year flood.

a) Responsibilities of the Department of Safety and Permits: It shall be the responsibility of the Department of Safety and Permits to act as repository for first floor elevation records and to assign required 1st. floor elevation. The notation shall be made on the face of the building permit. The first floor elevation of new residential construction and substantial improvements must, at a minimum, be elevated to the 100-year base flood level as determined by the FIA Flood Hazard Boundary Maps and the following Table for the particular zone in question. Minimum Floor Elevation Requirement for New Construction and Substantial Improvements.

ZONE	MEAN SEA LEVEL IN FEET
A33, B33	-4.0
B5	-3.5
A6, A7, A11, A30, A36, B6, B7, B11, B30	-2.0
A39	-1.5
A32	-1.4
A12, A17, A29, A31, A37, B12, B17, B29, B31	-1.0

A15, B14	0.0
A10, B10	0.5
A18, B18	1.5
A8, A9, A16, A19, B8, B9, B16	2.0
A21	2.5
A20	3.0
A38	4.5
A22, A23, A24	5.0
A25	6.5
V26, V35	10.5
V27	12.0

b) Responsibilities of the Department of Streets:

Upon application for a Building Permit, and prior to the issuance of a Use and Occupancy Certificate, the applicant must present a Grade Certificate to the Department of Safety and Permits which shows the mean sea level elevation of the first floor of the structure, as certified by the Department of Streets, and certification that requirements of paragraphs of Article 202 of the New Orleans Building Code or the elevation requirements contained herein whichever is the more restrictive have been complied with.

ARTICLE IV. BUILDING PERMITS REVIEWED

Section 32.6. Review of Permits for Construction

It shall be the responsibility of the Director of the Department of Safety and Permits to assure that:

a.) the first floor elevation of new residential structures or substantial improvements be at or above the base flood level of a 100-year storm.

b.) the first floor elevation of new non-residential structures or substantial improvements be either at or above the base flood level of a 100-year storm or if below the base flood elevation that together with its attendant utility and sanitary facilities be floodproofed up to the level of the base flood elevation of a 100-year storm.

c.) new construction or substantial improvements within special flood hazard areas be protected against flood damage, be anchored in accordance with the Building Code of the City of New Orleans to prevent flotation, collapse or lateral movement of the structure, utilizes construction materials and utility equipment that is resistant to flood damage and utilizes constructions methods and practices to minimize flood damage.

ARTICLE V. USE OF COASTAL HIGH HAZARD AREAS

Section 32.7. Designation of Coastal High Hazard Areas.

The Federal Insurance Administrator is the official agency that has designated coastal high hazard areas and F.I.A. official flood maps are on file at the City Planning Commission and the Department of Safety and Permits.

Section 32. 8. Utilization of new uses.

Any new structure or substantial improvement in a coastal high hazard area shall not be developed on land below the level of the 100 year flood level unless the new construction or substantial improvement is located landward of the reach of the mean high tide and shall be adequately anchored to piles or columns in accord with the Building Code of the City of New Orleans and shall have its lowest floor level at or above the base flood elevation of a 100-year storm. Further such construction shall have no basement and shall have space below the lowest floor free of obstruction so that the impact of abnormally high tides or wind driven water is minimized.

Section 32. 9. Existing Uses.

Any existing use located on land below the level of the 100-year flood in a coastal high hazard area shall not be expanded except in accord with these provisions.

ARTICLE VI. UTILIZATION OF NEIGHBORHING FLOOD PLAIN MANAGEMENT PROGRAMS

Section 32. 10 Flood Plain Management Programs in Adjoining Parishes

Consideration of individual flood plain management programs in Jefferson and St. Bernard Parishes shall be given in an approach to overall flood management in the Metropolitan New Orleans area.

ARTICLE VII. WAIVER OF REGULATIONS

Section 32. 11. Function of the Board of Building Standards and Appeals

It shall hereby be the function of the Board of Building Standards and Appeals to hear petitions supporting waivers in these regulations.

Section 32. 12. Procedure for appeal from the decision of the Director of Safety and Permits

Any applicant for a permit from the Director of Safety and Permits required by these flood insurance provisions whose application has been refused or revoked, or any person who has been ordered by the Director to incur any expense, or any person who feels that there are practical difficulties or unnecessary hardships involved in the way of carrying out the strict letter of these provisions or where it is alleged that there is an error in any determination made by the Director may, within fifteen days after being notified of such refusal or order, appeal from the decision of the Director to the Board of Building Standards and Appeals by giving the Director notice in writing that he does so appeal, said notice shall be accompanied by a check in the amount of $25. 00 payable to the City of New Orleans, which amount is to be retained by the City.

It shall be the duty of the Board:

a.) To hear and decide appeals where it is

alleged there is error in any order, requirement, decision or determination made by the Director in the enforcement of these flood-prone area provisions.

b.) To hear and decide all matters referred to it or upon which it is required to pass under these flood prone provisions.

c.) To pass upon appeals where there are practical difficulties or unnecessary hardships in the way of carrying out the strict letter of those flood prone area regulations, to vary or modify the application of any of the regulations or provisions of such articles relating to the construction or alterations of buildings or structures so that the spirit of these provisions shall be observed, public safety and welfare secured and substantial justice done.

d.) To interpret the intent or meaning of these flood-prone area regulations and so advise the Director and to recommend to the Council such amendments or revisions which may be required to clarify the wording; also to recommend amendments or revisions as may be required from time to time to meet changing conditions.

In order to execute the above mentioned powers, the Board of Standards and Appeals may reverse or affirm wholly or in part, or may modify the order, requirement, decision or determination appealed from and may make such order, requirement, decision, or determination of the Director, or to decide in favor of the applicant on any matters on which it is required to pass under these provisions, or to effect any variation in these provisions.

Decisions of the Board of Standards and Appeals should state the waivers or denials granted and conditions, if any, as they may require in such action. The decisions shall be filed in the office within ten working days after the hearing and a certified copy sent to the applicant by certified mail. The Director must abide in the actions taken by the Board.

ARTICLE VIII. PENALTIES FOR VIOLATION OF LAND USE AND CONTROL MEASURES FOR FLOOD-PRONE AREAS

Section 32.13. Penalties for Violations Related to these Regulations.

Under authority of Section 4728-R.S. Title 33 of the Louisiana Revised Statutes the City of New Orleans is authorized to collect fines for violation of Building and Zoning Regulations. The owner or general agent of a building or premises where a violation of any regulation for flood prone areas has been committed or exists or the

general agent, architect, builder, contractor or any other person who assists in any flood prone area regulation violation or who maintains any building or premises in which the violation exists shall be fined not less than ten dollars and not more than twenty-five dollars or be imprisoned for not more than thirty days for each day that the violation continues.

ARTICLE IX. CONFLICT OF FLOOD PRONE AREA REGULATIONS WITH OTHER ORDINANCES

Section 32. 14. Priority of Flood Pone Area Regulations.

All regulations described in the foregoing Chapter represent minimum standards, and supersede all existing ordinances which require lower standards.

ADOPTED BY THE COUNCIL OF THE CITY OF NEW ORLEANS DEC. 5 1974

JOSEPH V. DI ROSA
PRESIDENT OF COUNCIL

Delivered to the Mayor on DEC 5,1974

Approved: December 11, 1974

MOON LANDRIEU
MAYOR

Returned by the Mayor

on DEC. 11, 1974 at 3:02 P.M.

CAROL B. RIZZUTO
ACTING ASST. CLERK OF COUNCIL

The Building Code of the City of New Orleans currently defines building standards and the process which must be followed in obtaining building permits. The Articles 201 through 203 of Part III of the Building Code reads as follows:

PART III
PRELIMINARY REQUIREMENTS
CHAPTER 2—PRELIMINARY REQUIREMENTS

ARTICLE 201. PERMIT AND PLACARD.

It shall be unlawful to proceed with the erection, removal, re-roofing, demolition, all alterations, all additions, repairs, installation of machinery, air conditioning, of a building or other structures including the construction of grandstands and tents, a sign, marquee, or awning over the sidewalk, or to perform any excavations below lot grade, within the city of New Orleans, without having previously obtained a permit properly numbered and approved from the Director, unless specifically excepted as follows:

1. Removal and replacement of deteriorated weather-boards;
2. Removal and replacement of deteriorated floor boards;
3. Removal and replacement of deteriorated porch floor boards;
4. Removal and replacement of deteriorated steps—front and rear—and sides when not in conflict with Zoning Law;
5. Interior decorating;
6. Interior painting;
7. Wall papering;
8. Outside painting when not hazardous or when not requiring protective scaffolding;
9. Repair and installation of window screens, sash, cords and other window repairs;
10. Repairs to existing doors;
11. Sanding floors;
12. Paving of yard;
13. Fences, except masonry fences exceeding 4 feet in height, and fences or enclosures for exhibits, fair grounds, athletic fields, storage yards and other such similar enclosures (see Appendix No. 6);
14. Repairs to interior plastering;
15. Any other similar ordinary repairs as listed above except:
    (a) the cutting away of any wall, partition or portion thereof;
    (b) the removal or cutting of any structural beam of bearing support;
    (c) the removal or change of any required means of ingress or egress;
    (d) the re-arrangement of parts of a structure affecting the exit or entrance requirements;
    (e) the addition to, alterations of, replacement or re-location of any standpipe, water supply, sewer, drainage, drainleader, gas, soil, waste, vent or similar piping, electric wiring, or mechanical or other work affecting public health or general safety.

It shall be the duty of the Police to see that such work requiring a permit is authorized and to report the absence of a permit to the Director. All work must comply with this Code and shall be subject to inspection whether a permit is required or not at the discretion of the Director.

Note: See definition of "Repairs," Article 103.

If after issuance of a permit, the operation authorized thereunder be not commenced within 6 months after date of permit, or if after commencement of operations, the work be discontinued for a period of 6 months, such permit shall be re-submitted for approval of the Director, for which no additional fee will be charged.

Application for permit shall be made in writing to the Director as a certified statement by the owner or his agent, architect, engineer or contractor, upon a suitable form provided by the Director, which shall show the total floor area of proposed building, estimated cost of work, nature of improvement or repair, and use or occupancy of all parts of the building and such other reasonable information as may be required by the Director.

Any permit that has been obtained under a misrepresentation as to cost or approximate floor area, or upon failure to execute said work in accordance with said application, plans and specifications, shall constitute a violation of this Code, furthermore, the permit so obtained shall be corrected by the issuance of an additional permit. Any work done contrary to the requirements of this Code shall be stopped. Where the work performed is not in accordance with the application, plans and specifications, it shall be corrected. No permit will be granted except under conditions conforming to the provisions of this Code and other applicable ordinances and laws.

Changes in floor loadings shall comply with Article 2309.

A placard as required by Article 203 shall be kept continuously and conspicuously posted on the project site for the duration of the work.

ARTICLE 202. LOT GRADE

(a) General. Any lot or site upon which a building or structure intended for human occupancy is to be erected must be graded or filled (or both) to comply with the requirements of the Department of Streets of the City of New Orleans.

In case a lot or site, or part thereof, is higher than the adjoining or abutting lot, the Department of Streets shall approve the method used to prevent water from the higher lot or site flowing onto the lower adjoining or abutting lot or site.

Requirements for lot or site grading and filling (including Department of Health requirements where septic tanks are involved) are on file in the office of the Department of Streets and are obtainable from that Department. Same must be complied with by all applicants for a Building Permit.

(b) Certificate. Prior to actual issuance of a Use and Occupancy Certificate by the Department of Safety and Permits, the applicant shall present an approved and numbered Grade Certificate which has been secured from the Department of Streets stipulating all grading and filling has met their requirements.

When a lot is in excess of sixty (60) cubic yards below grade, the Owner, or his Agent, may request (in writing) permission from the Department of Streets to construct a building prior to filling and grading of the lot or site by posting cash, performance bond or negotiable securities, acceptable to the Finance Department of the City of New Orleans. The cash, performance bond or negotiable securities shall be deposited with the City of New Orleans. The securities to be deposited shall be of the class approved for investment for Life Insurance Companies in Louisiana and shall be considered at their market value in computing the amount to be deposited.

The Department of Streets shall certify to the Department of Finance, the amount to be deposited or bonded by the Owner to insure that all grading and filling requirements of this Article have been satisfied.

The cash, performance bond or negotiable securities will be promptly returned to the Owner upon completion of the lot or site filling and grading after certification by the Department of Streets. Should the grading and filling of said lot or site not be performed prior to occupancy of the building or structure, the Department of Streets will use the proceeds of said deposit to perform the necessary grading and filling of the lot or site as required by this Article.

(c) Slab Foundations. Top of slab shall not be less than eighteen (18") inches above the highest point of the curb in front of the lot or site. On unimproved streets where no curbs are available, slab grades, referenced to as above to future projected curbs are to be as established by the Department of Streets, in co-operation with the Sewerage and Water Board and the Department of Safety and Permits of the City of New Orleans.

Prior to pouring of the slab, an inspection shall be made by the Department of Streets to certify compliance with the above requirements and the Building Permit Placard shall be so certified by that Department. It shall be the duty of the Owner (or his authorized representative) to

notify the Department of Streets at least 24 hours in advance prior to pouring the slab. If the Owner (or his authorized representative) does not notify the Department of Streets and the slab is set below the stipulated elevation, the said Department of Streets is empowered to order the removal or correction of said slab and the Department of Safety and Permits is empowered to cancel the Building Permit.

(d) Piers or Chain Wall Foundations. Underside of sills shall not be less than twenty-four (24") inches above the highest point of the curb in front of the lot or site. On unimproved streets where no curbs are available, underside of sill grades, referenced to as above to future projected curbs are to be as established by the Department of Streets, in cooperation with the Sewerage and Water Board and the Department of Safety and Permits of the City of New Orleans.

Prior to setting the sills in place, an inspection shall be made by the Department of Streets to certify compliance with the above requirements and the Building Permit Placard shall be so certified by that Department. It shall be the duty of the Owner (or his authorized representative) to notify the Department of Streets, at least 24 hours prior to placing the sills. If the Owner (or his authorized representative) does not notify the Department of Streets and the sills are set below the stipulated elevation, the said Department of Streets is empowered to order the removal or correction of said sills and the Department of Safety and Permits is empowered to cancel the Building Permit.

(e) Exceptions. (1) In the Central Business District, (including area known as Vieux Carre) in built-up commercial areas and in areas where a satisfactory system of lot grades and building elevations already have been established, the Department of Streets may modify or vary the requirements of paragraphs (c) and (d) above, provided the new construction in the above mentioned areas shall always be equal to or above the average floor slab level in the particiular block or area.

(f) Fees. (1) The initial fee of eight ($8.00) dollars for a Grade Certificate of Compliance shall be paid to the Department of Streets at the time application is made for establishment of grade. This fee will include the first on-site inspection for grade and elevation, or the underside of sill elevation in accordance with the requirements of paragraph (c) or (d) above.

(2) Where call-back inspections are necessary, a fee of three ($3.00) dollars for each and every call-back inspection shall be paid to the Department of Streets at the time each appointment for such call-back inspection is made. This fee shall be paid to the Department of Streets prior to the call-back inspection.

ARTICLE 203. DRAWINGS AND SPECIFICATIONS.

With each application for a building permit, or electrical or mechanical permit, and when required by the Director of the Department of Safety and Permits for enforcement of any provisions of this Code, at least two sets of drawings and specifications shall be submitted.

Part. 1. Building Plan Requirement. Drawings and specifications for the construction of buildings having walls, floors, and roofs, including all electrical and mechanical work, shall be prepared by or under the direct supervision of a Louisiana Registered Architect or a Louisiana Registered Civil Engineer, and said drawings and specifications shall be imprinted with his seal so designating, and shall contain a statement to the effect that they comply with all City requirements to the best of his knowledge and belief and that he is generally administering (not generally administering) the work.

Assembly, Places of	Single story, less than 1,500 sq. ft., seating under 100 persons, when the electrical work does not exceed $3,000 and/or when the mechanical work does not exceed $5,000, in the opinion of the Director, Department of Safety and Permits.
Dormitories	When electrical work does not exceed $3,000 and/or when the mechanical work does not exceed $5,000, in the opinion of the Director, Department of Safety and Permits.
Hotels	When electrical work does not exceed $3,000 and/or when the mechanical work does not exceed $5,000, in the opinion of the Director, Department of Safety and Permits.
Industrial buildings	When electrical work does not exceed $3,000 and/or when the mechanical work does not exceed $5,000, in the opinion of the Director, Department of Safety and Permits.
Institutional buildings	When electrical work does not exceed $3,000 and/or when the mechanical work does not exceed $5,000, in the opinion of the Director, Department of Safety and Permits.
Mercantile buildings	When electrical work does not exceed $3,000 and/or when the mechanical work does not exceed $5,000, in the opinion of the Director, Department of Safety and Permits.

Exceptions	Table A
Apartments	One story Type V less than 1,500 sq. ft.
Assembly, Places of	Seating under 100 persons, one story Type V less than 1,500 sq. ft.
Dormitories	No exceptions.
Industrial buildings	(a) One story Type V under 500 sq. ft. - no drawings. (b) One story Type III (when outside the Inner Fire Limits) under 500 sq. ft. - drawings required but no architect or engineer required.

Institutional buildings	No exceptions.
Hotels	No exceptions.
Mercantile buildings	(a) One story Type V under 500 sq. ft. - no drawings. (b) One story Type III (when outside the Inner Fire Limits) under 500 sq. ft. - drawings required but no architect or engineer required.
Offices	(a) One story Type V under 500 sq. ft. - no drawings. (b) One story Type III (when outside the Inner Fire Limits) under 500 sq. ft. - drawings required but no architect or engineer required.
Old age homes	No exceptions.
Penal institutions	No exceptions.
Residences	(a) One story less than 2500 Square feet, except in cases provided in Section 11-29 of the Code of the City of New Orleans being Ordinance No. 828, M.C.S., as amended. (b) Second story additions not exceeding 500 sq. ft. drawings required but no architect or engineer required.
Schools	No exceptions.
Storage warehouses	(a) One story Type V under 500 sq. ft. - no drawings. (b) One story Type III (when outside the Inner Fire Limits) under 500 sq. ft. - drawings required but no architect or engineer required.

Where there are unusual conditions because of type of occupancy or type of construction, the Director of the Department of Safety and Permits may depart from the limitations set forth above and require drawings and specifications whenever deemed necessary.

Part 2. Mechanical and Electrical Plan Requirements. Drawings and specifications embodying mechanical and electrical installations for buildings shall be prepared by or under the direct supervision of a Louisiana Registered Mechanical or Electrical Engineer, as applicable, and said drawings and specifications shall be imprinted with his seal so designating, and shall contain a statement to the effect that they comply with all City requirements to the best of his knowledge and belief and that he is generally administering (not generally administering) the work, said drawings to be submitted at time of application for mechanical or electrical permits.

Exceptions:

Apartments	Single story, less than 1,500 sq. ft. when the electrical work does not exceed $3,000 and/or the mechanical work does not exceed $5,000, in the opinion of the Director, Department of Safety and Permits.

Offices	When electrical work does not exceed $3,000 and/or when the mechanical work does not exceed $5,000, in the opinion of the Director, Department of Safety and Permits.
Old age homes	When electrical work does not exceed $3,000 and/or when the mechanical work does not exceed $5,000, in the opinion of the Director, Department of Safety and Permits.
Penal institutions	When electrical work does not exceed $3,000 and/or when the mechanical work does not exceed $5,000, in the opinion of the Director, Department of Safety and Permits.
Residences	Single story, less than 1,500 sq. ft. when the electrical work does not exceed $3000 and/or the mechanical work does not exceed $5,000, in the opinion of the Director, Department of Safety and Permits.
Schools	When electrical work does not exceed $3,000 and/or when the mechanical work does not exceed $5,000, in the opinion of the Director, Department of Safety and Permits.
Storage warehouses	When electrical work does not exceed $3,000 and/or when the mechanical work does not exceed $5,000, in the opinion of the Director, Department of Safety and Permits.

Where there are unusual conditions because of type of occupancy or type of construction, the Director may depart from the limitations set forth above and require drawings and specifications.

Regulations concerning examination of electrical drawings and specifications are as provided in Article 5020.

Regulations concerning examination of mechanical drawings and specifications are as provided in Article 4805.

Regulations concerning examination of drawings and the field inspections of mechanical and electrical equipment and apparatus are provided in Chapters 47, 48, 50, and 53.

Plans and specifications shall be of sufficient clarity to indicate the nature and character of the work proposed and to show that the requirements of the law will be fulfilled. Computations, strain sheets, stress diagrams and other data necessary to show the correctness of the plans shall accompany the plans and specifications when required by the Director.

Any specifications in which general expressions are used to the effect that "work shall be done in accordance with the Building Code" or "to the satisfaction of the Director" shall be deemed imperfect and incomplete and every reference to this Code shall be by Article or Sub-Article applicable to the material to be used or to the method of construction proposed.

The application, drawings and specifications filed by an applicant for a building permit shall be checked by the Director on receipt of the required permit fee. When such drawings and specifications are found to be in conformity with the requirements of this Code and the Comprehensive Zoning Ordinance, and all other laws or ordinances applicable thereto, the Director shall issue a permit for the specified construction and/or installation.

When the Director issues the permit he shall endorse in writing, or stamp, on both sets of plans and specifications, "EXAMINED." One set of stamped plans and specifications is required to be kept on the site during the course of construction.

It shall be unlawful to erase, materially alter or modify any lines, figures, letters, words or coloring contained upon any such drawings, specifications or computations filed with or stamped by the Director. If during the progress of the execution of such work it is desired to deviate in any manner affecting the construction or other essentials of the building from the terms of the applications, plans or specifications or statement of cost of work, notice of such intention to alter or deviate shall be given in writing to the Director, and his written assent shall be obtained before such alterations or deviations may be made. If such change or deviation affects the carrying out of structural parts of such building or structure, or its classification, or grade of occupancy, new plans thereof shall be submitted to the Director for approval, and, if necessary, an additional permit shall be secured.

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ARTICLE 2. TITLE AND PURPOSE

"The purpose of the Comprehensive Zoning Ordinance is to encourage and promote, in accordance with present and future needs, the safety, morals, health, order, convenience, prosperity, and general welfare of the citizens of the City of New Orleans and to provide for efficiency and economy in the process of development, for the appropriate and best use of land, for preservation protection, development, and conservation of the natural resources of land, water, and air, for convenience of traffic and circulation of people and goods, for the use and occupancy of buildings, for healthful and convenient distribution of population, for adequate public utilities and facilities, for promotion of the civic amenities of beauty and visual interest, for preservation and enhancement of historic buildings and places, for promotion of large-scale developments as means of achieving unified civic design, and for development in accord with the Comprehensive Plan by establishing zoning districts and by regulating the location and use of buildings, signs, and other structures, water and land for agriculture, trade, industry, and residence, by regulating and limiting or determining the height, bulk, and access to light and air of buildings and structures, the area of yards and other open spaces and the density of use. To accomplish these objectives, the regulations and districts and accompanying maps have been designed with reasonable consideration, among other things, to the character of the districts and their peculiar suitability for particular uses." *

* City of New Orleans, Comprehensive Zoning Ordinance of 1970, Article 2, pg. 3.

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Coastal Management Alternatives

Coastal Management Alternatives have been developed which include:

Alternative 1: Urbanization-without management. This alternative would allow urban development to continue into the wetlands and would make no provision for the preservation of natural systems.

Alternative 2A: Controlled development - without management. This alternative would place restrictions upon development densities and land uses in ecologically sensitive areas without providing a program of overt actions designed to maintain or enhance existing natural systems.

Alternative 2B: Controlled development - with management. This alternative would both place restrictions upon development densities and land uses in ecologically sensitive areas and also provide for the development of an overt action plan designed to maintain and/or enhance natural systems.

Alternative 3A: Prohibited development - without management. This alternative would prohibit any further development and construction in ecologically sensitive areas and would not include provisions for a natural resources management program.

Alternative 3B: Prohibited development - with management. This alternative would prohibit any further development and construction in ecologically sensitive areas and would make provision for a systematic management program to maintain or enhance natural systems.

Under the above alternatives, existing environmental controls would be retained and utilized. Only alternatives 2B and 3B however, would provide an additional program for environmental management. Existing control mechanisms are listed below under subject headings:

Air Quality

The Louisiana Air Control regulations will be followed. The regulations will be enforced and regulated by the Louisiana Air Control Commission. The Louisiana State Board of Health will monitor, survey and coordinate the pollution control activities. The Louisiana State Board of Health will provide the technical expertise. As national standards and regulations are revised, the Louisiana Air Control Commission will advise the appropriate agencies.

Water Quality

The Louisiana Stream Control regulations will be followed. The Louisiana Wildlife & Fisheries Commission, Stream Control Commission and the Louisiana State Board of Health will coordinate and do all enforcement. The State Board of Health will provide the coordination between the project and the state. Technical staff and assistance will be provided by the New Orleans Sewerage and Water Board. As national standards and regulations are revised, the Stream Control Commission will advise the appropriate agencies.

Water Supply

There are currently no state or federal water supply regulations. Current congressional legislation will alter the United States Public Health Services 1962 (as amended) drinking water standards for interstate supplies. The Louisiana State Board of Health will coordinate, monitor and provide the applicable enforcement, based on the Louisiana State Sanitary Code. The State Board of Health will provide the coordination between the state and local levels.

Waterway Regulation and Modification

The Corps of Engineers regulations for navigable waters will be followed. The Corps will be responsible for this aspect of the environment. In addition to the involvement of the Corps of Engineers in this area, amendments to the City's Municipal, Zoning, and Building Codes will require that building permits be secured prior to any modification of any waterway. Therefore, the city will also exercise control in this area.

Solid Waste

The Louisiana State Sanitary Code as well as New Orleans ordinances will be followed for regulating solid waste. The Louisiana State Board of Health will provide enforcement. Monitoring will be carred out by both the Louisiana State Board of Health and the New Orleans Department of Sanitation. As national standards and regulations are revised,

the Louisiana State Board of Health will advise appropriate agencies.

Noise

HUD noise abatement guidelines, EPA standards and OSHA regulations will be followed. Enforcement will be provided by the federal agencies. The Louisiana State Board of Health will provide the monitoring and the coordination. The State Board of Health should be apprised of all revisions to federal regulations and standards, and changes in the city ordinances.

Vector Control

The Louisiana State Sanitary Code and local rat ordinances will be followed. Vector Control will be enforced and monitored by both the State Board of Health and the New Orleans Mosquito Control Program.

Wildlife & Fisheries

Federal and state conservation laws and the National Endangered Species Act will be followed as well as the state water quality regulations. It is currently against city ordinances to hunt within the city limits. The Louisiana Wildlife and Fisheries Commission will handle the regulation and enforcement by monitoring and checking the fishing licenses. Coordination will be handled by the Louisiana Wildlife and Fisheries Commission. As new federal legislation is enacted the Louisiana Wildlife and Fisheries Commission will monitor and enforce as appropriate.

Aesthetics

There are currently no beautification or aesthetic regulations. The City Planning Commission with the cooperation of the Mayor's Aesthetic Review Committee does review and comment on development plans.

Historic and Archaeological Sites

The National Preservation Act will be followed and the places cited in the National Register of Historic Places will be checked and followed. The State Department of Art, Historical & Cultural Preservation or State Museum Board will coordinate and carry out activities in this area with the federal agencies. Inventory and classification of archaeological sites will be carried out with the cooperation of local universities.

Radiation

Regulations of the Board of Nuclear Energy will be followed. The Board will enforce and monitor these regulations. The Board will also coordinate their activities with the Atomic Energy Commission.

Land Use

The New Orleans City Planning Commission subdivision regulations and zoning ordinances will be followed. The building inspectors of the New Orleans Department of Safety and Permits will do the enforcing. The City Planning Commission will provide the coordination with the Regional Planning Commission and State Planning Advisory Commission.

Flood Control

The criteria provided in the Flood Disaster Protection Act of 1973, which amends the National Flood Insurance Act of 1968, will be followed. Monitoring will be provided by both the Orleans Levee Board and the Corps of Engineers. The New Orleans Sewerage and Water Board will coordinate the flood control activities. The New Orleans Sewerage and Water Board will be apprised of all revisions to the flood protection insurance criteria.

Shellfish Sanitation

The Louisiana State Board of Health regulations will be followed. The Louisiana State Board of Health will also provide the monitoring and enforcement of these regulations.

Flood Control and Institutions

The Louisiana Sanitary Code, city ordinances, and applicable state laws will be followed.

Conservation of Resources

Appropriate federal and state laws will be adhered to. The New Orleans Planning Commission will be the coordinating agency. The various agencies will, for the most part, concern themselves with the enforcement of the following regulations, codes and standards:

1. Air Quality

   a. Louisiana Air Control Law. Louisiana Revised Statutes of 1950, Title 40, Chapter 12, Sections 2201-2216 and Title 32, Section 1304, Subsection A.

   b. Louisiana Air Pollution Control Regulations. Effective July 17, 1972: amended November 21, 1972.

   c. National Ambient Air Quality Standards, Code of Federal Regulations, Title 42, Parts 50, 51, and 52. Title 40, Parts 60, 61, and 85.

2. Water Quality

   a. Louisiana Stream Control Commission Acts.

   b. Louisiana Regulation on Reports of Industrial Waste Discharges. Title 56, Chapter 3, Part 1, Section 1435, Louisiana Revised Statutes of 1950, August 1, 1951.

   c. Louisiana Rules Relating to Oil and Gas. Title 56, Chapter 3, Part 1, Section

   d. National Pollutant Discharge Elimination System.

3. Water Supply

   a. Louisiana State Sanitary Code.
   b. U. S. Public Health Service. Drinking water Standards for Interstate Supply, 1962 as amended.

4. Solid Waste

   a. Louisiana Sanitary Codes. Chapter X, Sections 10. 50-10. 56. 4 (Sewerage and Waste Disposal, Garbage, Rubbish, Ashes).

5. Noise

   a. U. S. Department HUD. Noise Assessment Guidelines. August, 1971.

   b. OSHA. Occupational Safety and Health Standards. Part 1910 of Title 29 of the Code of Federal Regulations.

   c. Noise Control Act of 1972, PL 92-574, 86 Stat. 1234. (Noise abatement standards to be established by EPA.)

6. Vector Control

   a. Louisiana Sanitary Codes

7. Wildlife and Fisheries

   a. Endangered Species Conservation Act of 1969, as amended.

   b. Coastal Zone Management Act of 1972.

8. Historic and Archaeological Sites

   a. Protection and Enhancement of the Cultural Environment, Executive Order 11593, National Historic Preservation Act of 1966.

9. Land Use

   a. Land Use Policy and Planning Assistance Act.
   b. New Orleans Comprehensive Zoning Ordinance
   c. New Orleans Subdivision regulations

10. Flood Control

   a. Flood Disaster Protection Act of 1973.
   b. National Flood Insurance Act of 1968.
   c. Federal Insurance Administration Standards.

11. Shell Fish Sanitation

   a. Louisiana State Board of Health Regulations

12. Food Control and Institutions

   a. Louisiana Sanitary Code

13. Construction

   a. Building Code of the City of New Orleans

Alternative Analysis

Alternative 1. Under Alternative 1 the urbanization without management alternative, there would be no change in current policies governing physical growth and change. The geographic areas developed, the residential densitites, locations of commercial, industrial, and recreational uses would increase or decrease without any significant degree of control beyond that presently exercised. It is possible that under such an alternative the urbanized area could eventually cover the entire land area of the city. Because the policy of allowing growth to continue subject only to market demands, the major land use distributions will occur on the newly developing areas in Eastern New Orleans and Algiers. Eventually, all wetlands will be urbanized and the natural resources of the areas will disappear.

Although housing for all socio-economic levels among present and future residents will be available under this alternative, future housing in areas which are now wetlands will be costly due to land preparation costs. Additionally, prolonged rapid subsidence rates will present substantial hidden costs to home owners. Lots will sink under foundations causing potential hazards and high maintenance costs in addition to detracting from the aesthetic qualities which may be present in future neighborhoods.

With no controls in addition to those now in effect, potential recreational areas in New Orleans East and Lower Algiers will develop with higher intensity land uses, thus, the amount of land available for recreation and open space to serve an increasing population would be reduced.

Alternative 2A. This controlled development without management alternative will place restrictions upon development densities and land uses in ecologically sensitive areas without providing a program of overt actions designed to maintain or enhance existing natural systems.

Development would be controlled primarily through the promulgation of amendments to the Municipal Code of the City of New Orleans, the Building Code, and the Comprehensive Zoning Ordinance. The recommended amendments to the Municipal Code defines environmental areas and those types of construction requiring a permit from the City of New Orleans and reads as follows:

ORDINANCE

CITY OF NEW ORLEANS

CITY HALL_____

CALENDAR NO._____

NO._____MAYOR COUNCIL SERIES

BY:_____

AN ORDINANCE to amend Ordinance No. 828 M.C.S., herein referred to as the "Municipal Code of the City of New Orleans", as amended by Ordinance No. 4817 M.C.S., being an ordinance to prescribe minimum requirements for land use and control measures for marshes, swamps, wetlands, estuaries, waterways, and environmentally sensitive areas in the City of New Orleans to ensure the maintenance, continued protection, and prudent use of the natural resources, renewable and non-renewable therein.

SECTION 1. THE COUNCIL OF THE CITY OF NEW ORLEANS HEREBY ORDAINS, that Ordinance hereafter referred to as the Municipal Code of the City of New Orleans, No. 828 M.C.S., as amended by Ordinance No. 4817 M.C.S., be, and it is hereby amended by adding to section 32-1 of the Municipal Code of the City of New Orleans the following paragraph, to wit:

"These regulations have the additional purpose of pre-

scribing the minimum requirements of land use and control measures for marshes, swamps, wetlands, estuaries, waterways, and environmentally sensitive areas in the City of New Orleans to ensure the maintenance, continued protection, and prudent use of the natural resources, renewable and non-renewable, in the City of New Orleans represented therein".

SECTION 2. By deleting from Section 32-2 of the Municipal Code of the City of New Orleans the definition of "new construction", and inserting in its stead the following definition:

"New Construction" (a) In areas defined as marshes, swamps, wetlands, estuaries, waterways, or environmentally sensitive areas, or designated as an ES-Environmentally Sensitive District in Ordinance No. 18.565 C.C.S. as amended by Ordinance No. 4264 M.C.S., and Ordinance No._____, the term "new construction" shall mean any excavation, dredging, drilling, grading, draining, filling, clearing, any land preparation, or the first placement of permanent construction on a site, such as the installation of piers, wharfs, regardless of size excavation or dredging for navigation, pipeline or drainage, canals or channels, or any other work such as the pouring of slabs, footings, or pilings or the placement of utility lines. (b) In areas not specifically defined as marshes, swamps, wetlands, estuaries, waterways, environmentally sensitive areas, or not specifically designated as ES-Environmentally Sensitive Districts, the term "new construction" shall mean the first placement of permanent construction on a site, such as the pouring of slabs or footings or any work beyond the stage of excavation. For a structure without a basement or poured footings, the start of construction includes the first permanent framing or assembly of the structure or any part thereof or its pilings or foundation, or the affixing of any prefabricated structure or mobile home to its permanent site. Permanent construction does not include land preparation, land clearing, grading, filling, excavation for basement, footings, piers, or foundations, erection of temporary forms, installation of sewer, gas and water pipes, or electric or other service lines from the street or existence on the property of accessory buildings, such as garages or sheds, not occupied as dwelling units or not a part of the Main Structure".

SECTION 3. By inserting at the end of Section 32-2 of the Municipal Code of the City of New Orleans the following definitions:

"Marsh, Swamp, Wetland, or Estuary. All of the area in the City of New Orleans bounded by and including (a) Lake

Pontchartrain, Paris Road, and Interstate Highway Ten; (b) U.S. Highway 11, U.S. Highway 90, Lake Pontchartrain and Chef Menteur Pass; (c) The western most shoreline of the Michoud Canal, the Gulf Intracoastal Waterway, Bayou Bienvenue, Lake Borgne, and Chef Menteur Pass; (d) Chef Menteur Pass, Rigolets Pass, Lake Pontchartrain, and Lake Borgne; (e) the Gulf Intracoastal Waterway, Chef Menteur Pass, the Louisville and Nashville Railroad right-of-way, as of the adoption of this ordinance, and Range Lines 13 East and 14 East.

"Waterway. Any body of water, natural or man-made, whether navigable or not, including lakes, rivers, streams, canals, bayous, lagoons, bays, or any other body of water not located within a public park or playground, which is located in the City of New Orleans."

"Environmentally Sensitive Area. Any area located in the City of New Orleans which is in a natural or pristine state, or any area located in the City of New Orleans which has been minimally impacted by man or the works of man and which is the permanent or temporary habitat of one or more species of fish, fowl, or wildlife".

SECTION 4. By inserting in Section 32-2 of the Municipal Code of the City of New Orleans, between paragraphs one and two, the following paragraph, now to be designated as paragraph two:

"It shall be unlawful for the Department of Safety and Permits to issue a permit for any new construction which may cause any significant adverse environmental impact upon any marsh, swamp, wetland, estuary, waterway, or environmentally sensitive area; prior to the issuance of any permit for construction in any marsh, swamp, wetland, estuary, waterway, or environmentally sensitive area, comments and recommendations shall be solicited and considered concerning potential environmental impacts resulting from such New Construction".

ADOPTED BY THE COUNCIL OF THE CITY OF NEW ORLEANS

_____

PRESIDENT OF COUNCIL

Delivered to the Mayor on _____

Approved:

Disapproved: _____

MAYOR

Returned by the Mayor

on _____ at _____

CLERK OF COUNCIL

Amendments to the Building Code define permit application requirements for construction in ecologically sensitive areas and requires the filing of an environmental assessment as follows:

ORDINANCE

CITY OF NEW ORLEANS

CITY HALL_____

CALENDAR NO._____

NO._____MAYOR COUNCIL SERIES

BY:_____

AN ORDINANCE to amend Ordinance No. 17,525 C.C.S., herein referred to as the Building Code of the City of New Orleans, begin an ordinance providing for the adoption of a Uniform Building Code.

SECTION 1. THE COUNCIL OF THE CITY OF NEW ORLEANS HEREBY ORDAINS, that Ordinance No. 17,525 C.C.S. hereafter referred to as the Building Code of the City of New Orleans, be, and it is hereby amended by deleting from the first paragraph of Article 201 of Part III, all after the phrase "...or awning over the sidewalks..." and all before exception number 1., and in its place insert the following, "piers or wharfs, regardless of size pipelines; elevated platforms; or to perform any excavation below lot grade including any dredging or channeling; or to fill, or drain any waterway, marsh, swamp, wetland or environmentally sensitive area within the City of New Orleans, without having previously obtained a permit properly numbered and approved from the Director, unless specifically excepted as follows:

SECTION 2. By deleting the period (.) at the end of the first paragraph of Article 202 (a) of Part III of the Building Code of the City of New Orleans and inserting the following: " ; where such lot or site is located within a marsh, swamp, wetland, estuary, waterway, or environmentally sensitive area as defined in Section 32-2 of Ordinance No. 828 M.C.S., as amended by Ordinance No. 4817 M.C.S. and Ordinance No._____, a waiver of this requirement may be granted by the City Planning Commission when deemed necessary to prevent harm to the environment in areas defined as marshes, swamps, wetlands, estuaries, waterways, or environmentally sensitive, or in areas designated as ES-Environmentally Sensitive Districts by Ordinance No. 18.565 C.C.S. as amended by Ordinance No. 4264 M.C.S. and Ordinance No._____.

SECTION 3. By inserting in Article 203 of the Building Code of the City of New Orleans, a Part 3 as follows: "Part 3. Site Description Requirement. Where new con-

struction, as defined by Section 32-2 of Ordinance No. 828 M.C.S., as amended by Ordinance No. 4817 M.C.S. and Ordinance No._____, is to take place in any marsh, swamp, wetland, estuary, waterway, or environmentally sensitive area, as defined by Section 32-2 of Ordinance No. 828 M.C.S., as amended by Ordinance No. 4817 M.C.S. and Ordinance No._____, the applicant for a construction permit shall submit to the Director-Secretary of the City Planning Commission of the City of New Orleans, thirty (30) copies of a complete description of the lot or site and its surroundings, and further information deemed necessary by the City Planning Commission for a proper determination of the matter including but not limited to the following: a description of the geographic location of the site; soil types present, elevation; flora and fauna located upon or in close proximity to the site, any historical, archaeological, or natural features located upon or in close proximity to the site; potential adverse impacts the proposed new construction may have upon the flora and/or fauna and historical, archaeological, or natural features located on or in close proximity to the site; the potential impact of the proposed new construction upon tidal flows or currents, patterns of subsidence, erosion and/or deposition. This site description shall also identify the purpose of the proposed new construction, the proposed use of the proposed new construction, and at least two alternatives to the new construction, one of which shall be a "no construction" alternative. There shall be a thirty (30) day period during which time comments shall be solicited from any interested party. The Director-Secretary of the City Planning Commission of the City of New Orleans, may require any additional information as is necessary to properly evaluate the potential environmental impact of a proposed new construction".

ADOPTED BY THE COUNCIL OF THE CITY OF NEW ORLEANS

_____

_____
PRESIDENT OF COUNCIL

Delivered to the Mayor on_____

Approved:

Disapproved:_____

_____
MAYOR

Returned by the Mayor

on_____ at_____

_____
CLERK OF COUNCIL

PROJECT DESCRIPTION FORM

(Environmental Assessment)

I. GENERAL

1. Name of Applicant: _____

2. Address of Applicant: _____
Street Address or Post Office Box

_____
City State Zip Code

3. Telephone Number: _____
Area Code Number

4. Type of Project: _____

_____

_____

5. Location of Project: _____

6. Purpose of Project: _____

_____

_____

7. Proposed Land Use (s): _____

_____

_____

8. a. Dimensions of Site or Lot: _____

b. Total acreage: _____

9. District Zoning: _____
(See Comprehensive Zoning Ordinance Base Maps)

10. Describe work to be Performed: _____

_____

_____

II. AREA DESCRIPTION

1. Describe on Site Soil Characteristics: _____

_____

_____

2. Types and Distribution of Vegetation on and near site:

_____

_____

3. Types and Distribution of fish, fowl, and wildlife species on and near site: _____

_____

_____

4. List and Describe any Historical or Archaeological features on and near site: _____

_____

_____

5. List and Describe any Body of Water on or contiguous to the site: _____

_____

_____

6. List and Describe natural features located on or near

6. (cont) the site: _____

_____

_____

III. ENVIRONMENTAL IMPACT

1. List and describe all temporary changes to the environment anticipated as a result of the proposed work: _____

_____

_____

_____

2. List and describe all permanent changes to the environment anticipated as a result of the proposed work: _____

_____

_____

_____

3. List and describe all actions to be taken to minimize adverse environmental impacts resulting from the proposed work: _____

_____

_____

4. List and describe all actions to be taken to minimize adverse environmental impacts resulting from on site land use activities: _____

_____

5. Describe all pungent or noxious odors which will occur as a result of the proposed work and on site land use activities: _____

_____

_____

6. List the sources and levels of noise which will occur as a result of the proposed work and on site land use activities: _____

_____

_____

7. List and describe all direct and indirect sources of air pollution resulting from the proposed work and on site land use activities: _____

_____

_____

8. List and describe all direct and indirect sources of water pollution resulting from the proposed work and on site land use activities: _____

_____

_____

9. List and describe all unavoidable adverse environmental impacts which will occur as a result of the proposed work or on site land use activities: _____

_____

10. List and describe all actions to be taken to reduce levels of noxious or pungent odors resulting from the proposed work and on site land use activities:_____

_____

_____

11. List and describe all actions to be taken to reduce levels of noise resulting from the proposed work and on site land use activities:_____

_____

_____

12. List and describe all actions to be taken to reduce emission of air pollution resulting from the proposed work and on site land use activities:_____

_____

_____

13. List and describe all actions to be taken to reduce water pollution hazards resulting from the proposed work and on site land use activities:_____

_____

_____

IV. ALTERNATIVES

List and describe at least two possible alternatives to the proposed work and the anticipated environmental impact of each alternative. One of these alternatives should be a "no construction" alternative.

Sworn to and subscribed Before Me this _____ day of _____, 19____

_____
Notary Public

Amendments to the Comprehensive Zoning Ordinance define permitted and Conditional Uses in newly created "Environmentally Sensitive Districts".

ORDINANCE

CITY OF NEW ORLEANS

CITY HALL_____

CALENDAR NO._____

NO._____MAYOR COUNCIL SERIES

BY:_____

AN ORDINANCE to amend Ordinance No. 4264 M.C.S., known and referred to as the Comprehensive Zoning Law of the City of New Orleans, being an Ordinance to protect and conserve the remaining natural and environmentally sensitive areas within the City of New Orleans to ensure a sound and wise balance between their development and their preservation and continued viability as renewable economic, recreation and open space resources through the creation of an "ES-Environmentally Sensitive", zoning district.

SECTION I. THE COUNCIL OF THE CITY OF NEW ORLEANS

HEREBY ORDAINS, that Ordinance No. 4264 M.C.S., known and referred to as the Comprehensive Zoning Law of the City of New Orleans, be, and it is hereby amended by inserting in Article 5, the following section designated Section 27:

SECTION 27. "ES-Environmentally Sensitive District".

27.1 Purpose of the District.

The purpose of this district is to provide a classification for those coastal areas of a marsh, wetland, estuary or waterway nature which are in a natural or pristine state or which have been minimally impacted by man or the works of man; which, by their nature, provide refuge or habitat for species of wildlife, fowl and fisheries; or which provide or affect sources of sustenance for species of wildlife, fowl, and fisheries, either directly or indirectly; and further to assure that land uses permitted in the district are consistent with traditional development in these areas and are designed to ensure the continued environmental and ecological viability of natural processes operating within the district.

27.2 Permitted Uses.

A building or land shall be used only for the following purposes subject to the performance standards of Article 5, Section 20, whenever said permitted use would normally require sewer and water facilities that where public sewer and water facilities are available or can be reasonably extended, that such facilities will be utilized or that private sewer and/or water facilities be approved by the responsible public agencies in a manner that would not permanently disrupt the natural current and tidal flows:

1. Public and private open space areas, wildlife reservations, and similar conservation projects.
2. Public or private fishing or hunting preserves.
3. A single family residence or "fishing camp" except when such use results in the draining, filling, excavating any marsh lands or in separating viable marsh from the ecosystem, and provided that height, area, and bulk requirements applicable to RS-1 districts are met.

27.3 Permitted Conditional Uses.

In order to provide for certain uses, which, because of their unique characteristics, cannot be properly classified in a particular zoning district, the City Council under the provisions of Article 15 and specifically under Section 2.6 shall authorize the following conditional uses:

When it has been determined by the City Council that such conditional uses will promote the public welfare, public safety, and public health, and that the proposal is in general compatability with adjacent or nearby land uses, applications for the following conditional uses shall be transmitted to the City Planning Commission for a public hearing and action in accord

with the provisions of Article 15:

1. Any of the following which might not result in the draining of filling of any marsh area or result in the disruption of natural processes, provided that where such uses are located in a marsh, swamp, wetland, estuary, or waterway, that structures where necessary shall be placed on raised platforms or pilings so as not to disrupt natural tidal and current flows, and further provided that where public sewer and water are available or can be reasonably extended, that such facilities will be utilized or that private sewer and/or water facilities be approved by the responsible public agencies in a manner that would not permanently disrupt natural current and tidal flows:
    1. two-family dwellings, provided that all height, area, and bulk requirements, exclusive of piling heights, of RD-2 districts are met.
    2. townhouses, provided that all height, area, and bulk requirements, exclusive of piling heights, of RD-1 districts are met.
    3. hotels and motels containing not more than 20 rooms provided that it meet the requirements of RM-3 districts.
    4. private club, lodge, meeting hall or marina provided that it is located on a site having a minimum lot area of 10,000 square feet and further provided that it meets all other requirements of RS-1 districts.
    5. shops and stores for the conduct of a retail business but occupying no more than 5,000 square feet of floor area, provided that all requirements for B-1 districts are met.
    6. piers, wharves, boat houses, boat docks, or boat rental, repair and related service facilities.
    7. restaurants, but not drive-in restaurants.
    8. camping and picnic grounds
    9. museums
    10. university research centers, laboratories or other research facilities
    11. excavation, filling, petroleum or mineral exploration or extraction operations, dredging, or flood control projects designed to protect existing developed areas, provided that such operations are carried out in such a manner as to offer maximum protection to natural environmental systems.
    12. any public use
    13. any other use similar to those listed above or those found to be in the public interest to further the purposes set forth for this district.

ADOPTED BY THE CITY COUNCIL OF THE CITY OF NEW ORLEANS

PRESIDENT OF COUNCIL

Delivered to the Mayor on _____

Approved:

Disapproved: _____

MAYOR

Returned by the Mayor

on _____ at _____

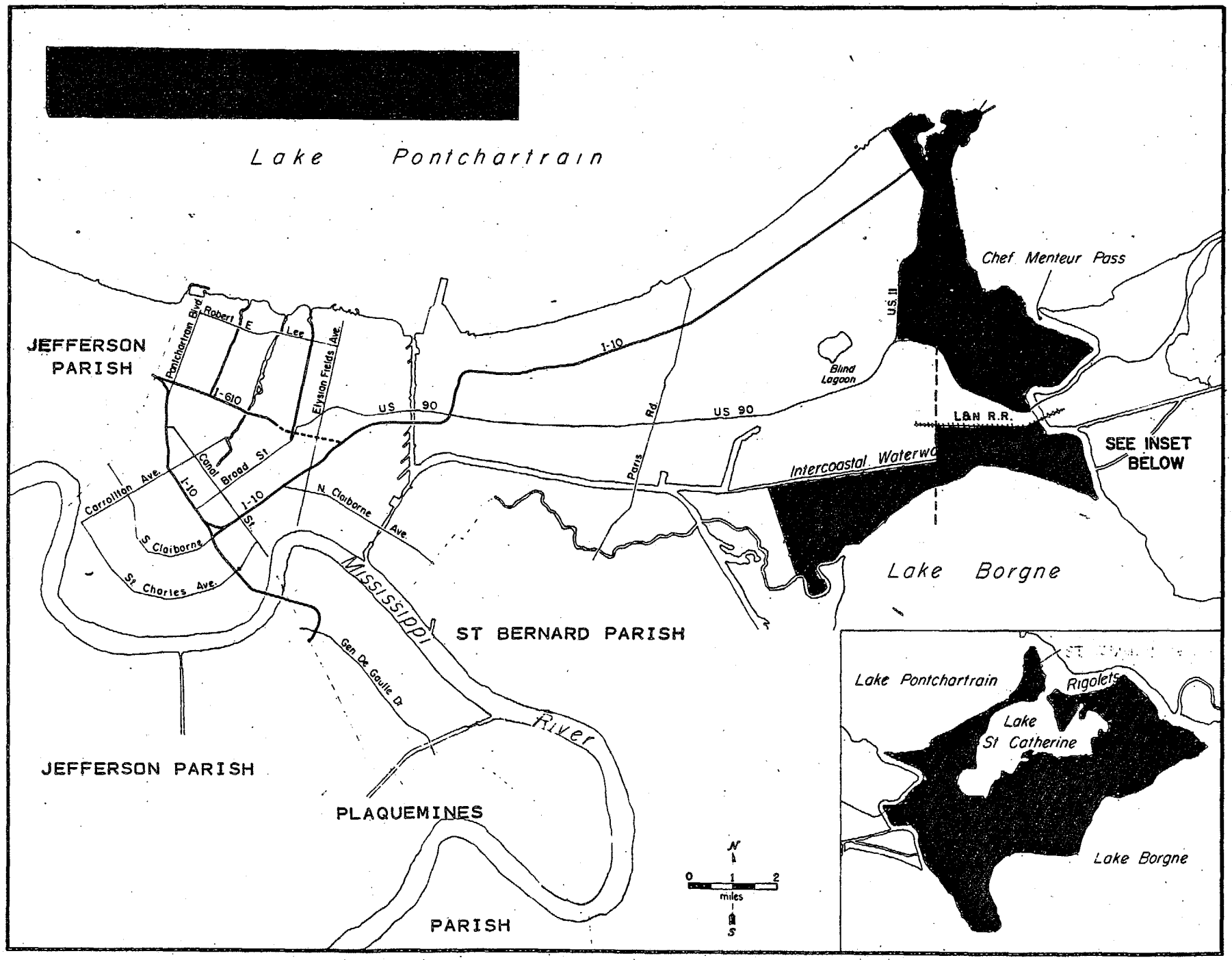
CLERK OF COUNCIL

In order that existing city agencies be efficiently coordinated in Coastal Zone Management functions and that all areas of expertise available to the City can be utilized, each permit application would be reviewed by the City Planning Commission, Sewerage and Water Board, Department of Safety and Permits, Department of Sanitation, Orleans Levee Board, Department of Utilities and other appropriate agencies. Additionally, the existing Planning Advisory Council (PAC) membership should be expanded to include the Louisiana Wildlife and Fisheries Commission, Louisiana Department of Conservation, U.S. Army Corps of Engineers, the Louisiana State Board of Health, and the U.S.. Coast Guard. This expansion of PAC membership would increase the existing pool of knowledge available for advising the City Council in the decision making process. Additional PAC members may be drawn from the local academic community. This would provide a broad base of expertise to guide the management program and ensure that the actions of all agencies at the federal, state, and local levels do not conflict.

In order that sufficient time be made available for further study and research as to the appropriate construction techniques for wetlands, a moratorium should be placed on all construction and land preparation in Critical Environmental areas, except for structures which will be built on raised pilings or platforms for a period of two years. During this one year period, studies will be conducted to establish the appropriate construction methods to be permitted in Environmentally Sensitive Districts.

So that the City may have the in-house expertise and means of continuously monitoring land use activities in ES-districts, the city will: first, formally establish an environmental planning section in order that the city will be able to carry out a continuing program of comprehensive coastal zone and environmental planning on a long range city-wide basis. Second, an additional staff position in the Department of Safety and Permits should be funded; the person assigned to this new position would have as his primary responsibility the inspection and monitoring of all land use activities within ES-Districts to ensure that all codes, rules, regulations and environmental safeguards are adequately adhered to, and to ensure that violations are reported and prosecuted.

This alternative would have the effect of providing for the intelligent use of existing natural areas. While this alternative places limits upon uses and densities in specific areas thereby reducing the acreage available for residential and other uses, this alternative will promote the development of areas having more stable soils and can be viewed as beneficial to consumers. Additionally, this alternative would act to prevent further urban sprawl, reduce automobile dependence by allowing greater efficiency in mass transit


Lake Pontchartrain
JEFFERSON PARISH
Pontchartrain Blvd
Robert E Lee
Elysian Fields Ave
I-610
I-10
US 90
Chef Menteur Pass
U.S. 11
Blind Lagoon
L&N R.R.
SEE INSET BELOW
Intercoastal Waterway
Paris Rd
Carrollton Ave
Canal Broad St
N. Claiborne Ave
S Claiborne
St Charles Ave
Lake Borgne
MISSISSIPPI
ST BERNARD PARISH
Gen De Gaulle Dr
River
JEFFERSON PARISH
PLAQUEMINES
PARISH
N
0 1 2
miles
Lake Pontchartrain
Rigolets
Lake St Catherine
Lake Borgne

facilities (especially when considered in combination with the city's proposed Growth Management Land Use Policy), and will serve to curb the destruction of natural, renewable resources.

This alternative however, makes no provision for the overt management of natural areas and therefore will not function in maintaining natural resources.

Alternative 2B. Alternative 2B is essentially identical to alternative 2A, except that this alternative provides for a program of research and the development of resource management alternatives. The management program alternatives developed would recognize the fact that Orleans Parish is extremely fortunate in having major wetland zones within its boundaries. The marshes between the Rigolets and Chef Menteur Pass and those fringing the levee systems of New Orleans East are valuable as a storm buffer, as urban open space, and as a recreation resource, as well as acting as a nursery ground for fisheries production of Lake Pontchartrain and Borgne. They are contiguous with the marshes of the lower Pearl River basin and together these areas form a large zone of near natural environment in close proximity to population concentrations of the Gulf Coast. The marshes are generally unsuited to intense urban development; therefore, their allocation and management for compatible uses is desirable.

The wetland system is not fully self-maintaining because of natural and man-made stresses. Deltaic processes that originally built the wetlands are cyclic. The river builds land through progradation and aggradation for a period. Eventually, it abandons the course for a steeper gradient to the Gulf. At the time of abandonment marine forces begin to dominate the system and erosion takes place. The wetlands in Orleans Parish have been abandoned by the river for over 500 years and are subject to marine forces of erosion by tide, current, and storm. The area is influenced by roads, water pollution, buildings on the natural levees, commercial shipping, recreational boating, flood and hurricane protection levees and structures, and proposals for additional land uses. If this area is to return its full natural potential for recreation and other uses to the people of the parish, a management plan for its protection, conservation, and improvement is essential.

The process of developing a management plan involves two phases and would require approximately two years to complete. Phase I includes inventory, collection, and analysis of basic physical data essential for future decision making. Phase II involves the setting of management goals and the formulation of attainable plans for their achievement. Two studies previously completed by consultants, "Environmental Evaluation of the New Orleans East Area" and "Environmental Baseline Study, St. Bernard Parish", have produced a basic but general understanding of the region that need not be repeated in the present study except as background. The major thrust of the proposed study is a detailed analysis leading to specific recommendations for management practices to maintain and upgrade the area for multiuse and water-oriented recreation. Following is a detailed program of the study.

Phase I. Data Base

Phase I will be organized into two parts reflecting the type of information being developed. Part I, Baseline, involves a detailed inventory and analysis of existing conditions and establishment of management units. Part 2, Measurement, involves specific collection and analysis of selection parameters within each unit to establish a basis for the management program.

Part 1. Base line . This portion of the study will be similar to the cited studies and builds upon the data with expansion and modification as needed to include the full study area. Baseline data will be derived from existing literature search, map and aerial photo review, and field work. It provides a background presented in such a manner that a lay reader may understand the future planning decision. For the planner it provides the basis of management unit identification.

The baseline will include the following:

A. Development of the land base--This section will describe the setting of the area under study in terms of the geological processes, materials, and forms that have influenced its present condition. In the rapidly changing environment of southern Louisiana this is an essential first step in the planning process.

B. Inventory of existing features--
   Physical: topography, landforms, drainage, surface and subsurface structures, soils, water regime, meterology, accretion and erosion.

   Biological: flora and fauna

   Cultural: human use and modification

C. Establishment of management units--The basic unit of management to be used is the environmentally based management unit. These are units that can be identified based upon physical char-

acteristics, biological conditions, state of cultural modification, or combinations of conditions giving a particular land area an identity useable for management purposes.

D. Identification of problems or opportunities related to each management unit. This will be a general summary of conditions found in the above studies and is intended to identify areas or problems that will need further treatment in the remaining portions of the total management study.

E. Archaeological survey--A systematic archaeological survey of Orleans Parish will be undertaken by a local university to locate, describe, collect, and assess the value of all remaining prehistoric archaeological sites that have any surface configuration. It should be emphasized that the probability is quite high that there remain a considerable number of archaeological sites which have not yet been discovered. Techniques to be utilized in this research component include the use of aerial photography, aerial infra-red photography, on ground traversing, test excavations, cores, radio-carbon dating and detailed artifact analysis. The precise location of each site will be determined by latitude and longitude. The site name, number, location, and all relevant data will be placed on computer cards for easy data retrieval to allow for a rapid assessment of the impact of any project in Orleans Parish on its prehistoric resources.

Part 2. Measurement. This portion of the study is intended to supply the essential detailed data needed as a basis of management decision. It will establish an original base of information that is not presently available and will allow for projection of a specific management program.

Basic to management of wetland systems is understanding and control of hydrology and water quality. Because measurement is an expensive and time consuming process it will be limited to the parameters essential to development of a management program.

Measurement activities will be designed and carried out by qualified scientists. The organization of this part of the study allows three months for experiment design and preparation. Measurement will take place over a full year period with trained personnel scheduled to be in the field for one week per month.

Measurement will include the following:

A. Tide and current data--The monitoring and measuring of tides and currents over one yearly cycle which can be correlated with existing long term tide and weather station records to establish a predictive model for future management use. Existing guage stations in the area will be used as a base and observations will be made and related to them.

B. Specific elevation survey--Because of the low-lying nature of the land it is necessary to identify elevations at key points within the management units. Elevations will be related to the tide and current information to provide an indication of existing water-land surface relationships. Pilot areas will be surveyed in detail and other areas will be surveyed on a sample basis.

C. Detailed flora and fauna survey--Marshland vegetation and fauna is closely correlated with elevation, tide and water chemistry conditions. They, therefore, serve as biological indicators of physical condition and change. A statistically sound sampling procedure will be used for survey of each management unit over a yearly cycle.

D. Water quality measurement--Water, its biological and chemical properties, is a basic element of wetland ecology. A water sampling and analysis program will be established to identify specific conditions.

E. Physical structure--The changes in the land base itself will be monitored on a systematic basis. Selected areas where accretion or erosion are evident will be measured to give a basis for prediction of land loss or gain to be expected in the future. Borings will be made at selected points to establish near surface conditions.

F. Archaeological sites--All archaeological sites in Orleans Parish will be sampled, dated and analyzed.

Phase II. Resource Management Plan

The resource management plan for the area will be an integration of goals for use and the restrictions or opportunities offered by the environmental setting. Phase II is organized into three parts. Part 1, Goals, is concerned with setting specific goals and uses to be accommodated in a management plan. Part 2, Special Uses, is concerned with detailed evaluation of particular potential uses such as oil and gas exploration, geothermal power generation, pipeline construction, marina development, and housing, that may require special treatment or programs to insure environmental compatibility. Part 3, Resource Management Plan, makes recommendations for specific

management techniques and programs based upon the previous portions of the study.

Part 1. Goals. The use program for management will be developed jointly between the Planning Commission and consultants. Public input to the process will be solicited and developed through a series of public meetings to gain testimony on needs and desires of the people of the community and the region. The goals will provide the basis for development of a program for land use of the area.

Part 2. Special Uses. Special uses defined in the program will be investigated in detail, their potential impact evaluated, and methods of reducing impact of required but obtrusive uses developed.

Part 3. Management Plan. All of the data from Phases I and II are to be brought together in this part. Specific plans for management of each unit will be presented. The plan will include use recommendations, protection plans, and proposals for modification or control needed to fulfill the needs of the plan. Such items as plans for reduction of erosion, control of water regime, and selective rebuilding will be included. Recommendations for administration and future monitoring of environmental changes will be presented.

Alternative 3A. Alternative 3A would prohibit any and all future development in ecologically sensitive areas, reserving these areas as natural environments and would provide the initiation of the management proposal incorporated in Alternative 2B. Under this alternative, the affected areas would be governed by the following amendment to the Comprehensive Zoning Ordinance:

ORDINANCE

CITY OF NEW ORLEANS

CITY HALL_____

CALENDAR NO._____

NO._____MAYOR COUNCIL SERIES

BY:_____

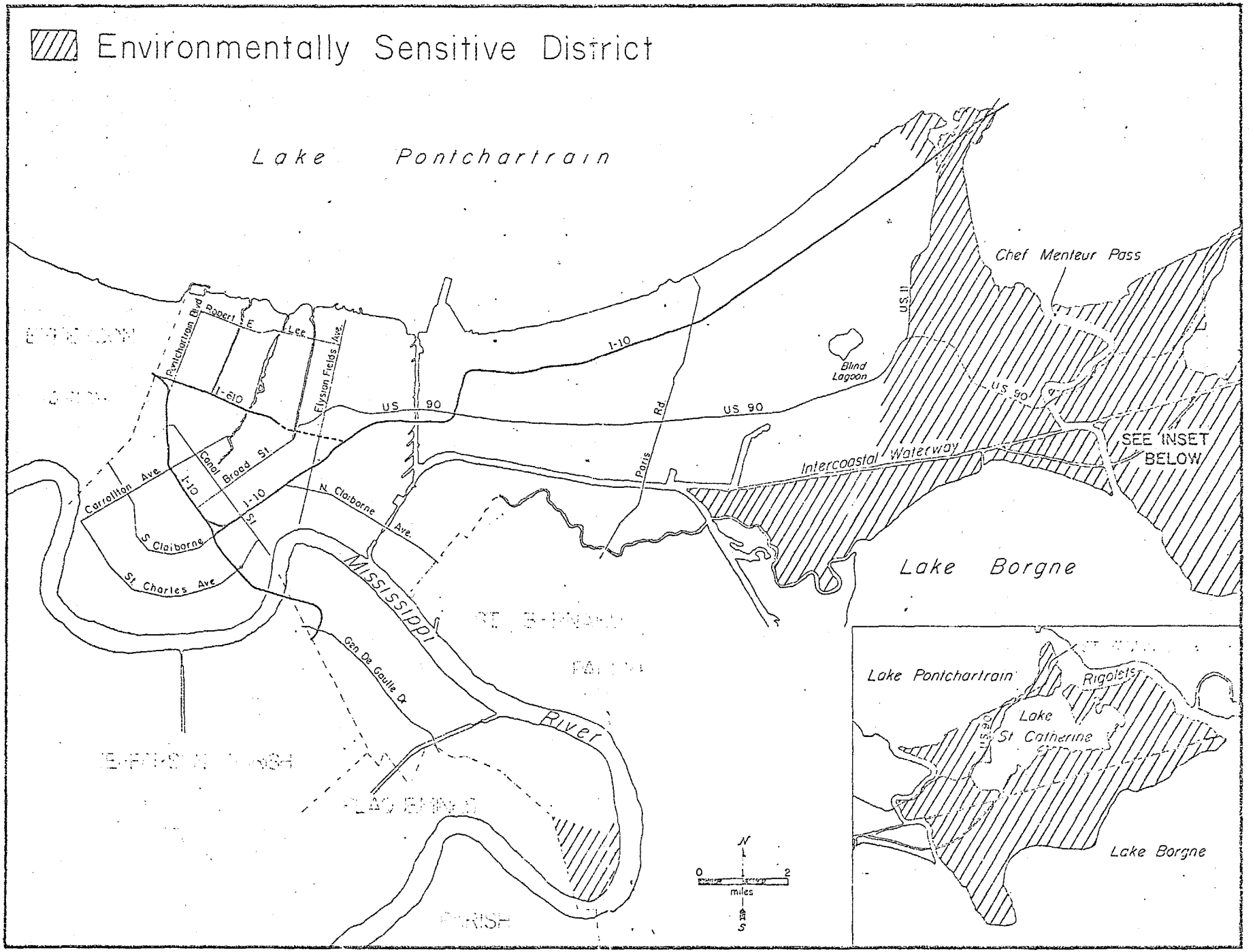
AN ORDINANCE to amend Ordinance No. 4264 M.C.S., known and referred to as the Comprehensive Zoning Law of the City of New Orleans, being an Ordinance to protect and conserve the remaining natural and environmentally sensitive areas within the City of New Orleans to ensure a sound and wise balance between their development and their preservation and continued viability as renewable economic recreation and open space resources through the creation of an "ES-Environmentally Sensitive", zoning district.

SECTION I. THE COUNCIL OF THE CITY OF NEW ORLEANS HEREBY ORDAINS, that Ordinance No. 4264 M.C.S., known and referred to as the Comprehensive Zoning Law of the City of New Orleans,be, and it is hereby amended by inserting in Article 5, the following section, designated Section 27:

"Section 27. ES-Environmentally Sensitive District".

27.1 Purpose of the District.

The purpose of this district is to provide a classification for those areas of a marsh, wetland, estuary or waterway nature which are in a natural or pristine state or which have been minimally impacted by man or the works of man; which, by their nature, provide refuge or habitat for species of wildlife fowl and fisheries; or which provide or affect sources of sustenance for species of wildlife, fowl, and fisheries, either directly or indirectly. Land uses permitted in the district are consistent with traditional development in these areas and are designed to ensure the continued environmental and ecological


Environmentally Sensitive District
Lake Pontchartrain
Chef Menteur Pass
Blind Lagoon
US 11
US 90
I-10
I-610
Elysian Fields Ave.
Paris Rd.
Intercoastal Waterway
SEE INSET BELOW
Lake Borgne
Carrollton Ave.
Canal St.
Broad St.
N. Claiborne Ave.
St. Claiborne
St. Charles Ave.
MISSISSIPPI
Gen De Gaulle Dr.
River
0 1 2
miles
N
S
Lake Pontchartrain
Rigolets
Lake St Catherine
Lake Borgne

viability of natural processes operating within the district.

27.2 Permitted Uses.

A land shall be used only for the following purpose subject to the performance standards of Article 5, Section 20:

1. Public and private open space areas, wildlife reservations, and similar conservation projects.
2. Resource management activities conducted by public agencies whose purpose is to maintain and/or enhance natural ecosystems.

ADOPTED BY THE COUNCIL OF THE CITY OF NEW ORLEANS

_____

PRESIDENT OF COUNCIL

Delivered to the Mayor on _____

Approved:

Disapproved: _____

MAYOR

Returned by the Mayor

on _____ at _____

CLERK OF COUNCIL

Alternative 3A would have the effect of preventing any and all further development in wetlands areas, as well as preventing future dredging and channelization projects, mineral exploration and extraction activities and any other use which will have the effect of modifying the area's natural environment except for resource management activities.

By preventing further use of wetland areas, residential, commercial and industrial expansion will be accomplished through increasing densities and redeveloping the currently urbanized areas of Orleans Parish and through the development of the Lower Coast of Algiers.

Alternative 3B. Alternative 3B is essentially the same as Alternative 3A except that no provision would be made for the management of natural resources, thus, allowing natural processes to continue without a program for regulating water quality, abuting erosion, etc.

Recommendations

Because it is important to maintain a balance between the economic growth of the City of New Orleans and the necessity of intelligently developing the city's natural resources, it is recommended that Alternative 2B, be implemented. By implementing Alternative 2B, it would be ensured that the potential resources of the city's natural resources will be utilized to their utmost potential, that development will consider the implications of natural systems, and that adequate open space for recreational purposes will be provided for future generations of New Orleanians.

8 Summary

This Coastal Zone Management Plan for the City of New Orleans is the product of two years concentrated effort in analysis, editing and writing. Contained within volumes 1 and 2 is a summary of the environmental conditions which have shaped the growth of the City of New Orleans, the history of the city, an assessment of existing social and environmental conditions found in New Orleans, and a positive action program for the conservation and development of New Orleans' unique economic and recreational resource, the wetlands.

The Coastal Zone Management Plan, when adopted will have, by ordinance, established the vehicle by which a multi-disciplinary, coordinated approach will be made toward the rational management of the natural environment and the attainment of the following goals:

1) The maintenance of a high level of quality within estuary areas; in particular and within the City of New Orleans in general;

2) the formulation of land use policies and techniques appropriate to marsh-estuary areas;

3) the formulation of a means by which energy resources may be exploited without adversely impacting environmental quality;

4) the provision of adequate open space and recreational areas for the benefit of the citizens of the New Orleans Metropolitan area, and the State of Louisiana;

5) to protect for perpetuity, the economic and ecologic resources represented by the natural environment;

6) the efficient utilization of existing governmental agencies, in a coordinated fashion, in the management of sensitive environmental areas; and,

7) the establishment of land use guidelines and priorities in estuary areas.

This report represents a preliminary effort toward the formulation of a sophisticated, technically grounded Coastal Zone Management Plan for the City of New Orleans. The data presented in this report, while adequate to formulating a generalized Management Plan, is inadequate to the task of specifying specific conditions within small segments of the City's Coastal Zone. That is, a more detailed management study must be conducted to determine the precise environmental and ecologic conditions present. The Management Plan recommended herein would provide the necessary general controls to protect environmental quality. What is needed is further refinement to determine if and where more stringent regulatory measures are necessary and to determine appropriate amelioratory actions in reversing marsh deterioration.

Further study is needed to determine precise conditions on a sub-unit basis within the context of hydrologic units. Drainage patterns for each acre of marsh must be known so that criteria may be developed by which permitted construction projects can be evaluated with respect to their environmental impact. In this regard, additional studies will be conducted to define in rather precise terms, the geographical and biotic characteristics of small sub-units of each hydrologic unit.

Over the next several months, studies must be performed to determine the effects tides and currents are having on shorelines, and the effects that alterations upon tides and currents would have; the means of preventing flood damage; means for protecting and re-establishing species of fish, shellfish, and wildlife; appropriate recreational opportunities which can be provided in wetlands areas; the means for reintroducing those natural elements which have been lost through leveeing,channeling, etc., and to determine those areas of the National Interest which can best be served through appropriate well timed and efficient management program options.

Additionally, studies should be conducted to determine the relative value and significance of each known archaeological site within the wetlands in the City of New Orleans.

By conducting these studies, a baseline would be established to determine not only the potential effects of future construction and natural processes, but also to determine the ongoing effects of present man-made features within the area. The collection and periodic updating of these data will provide the knowledge necessary for taking remedial and preventative measures to preserve what yet remains of the Natural Environment.

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